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The small house

Arthur Martin

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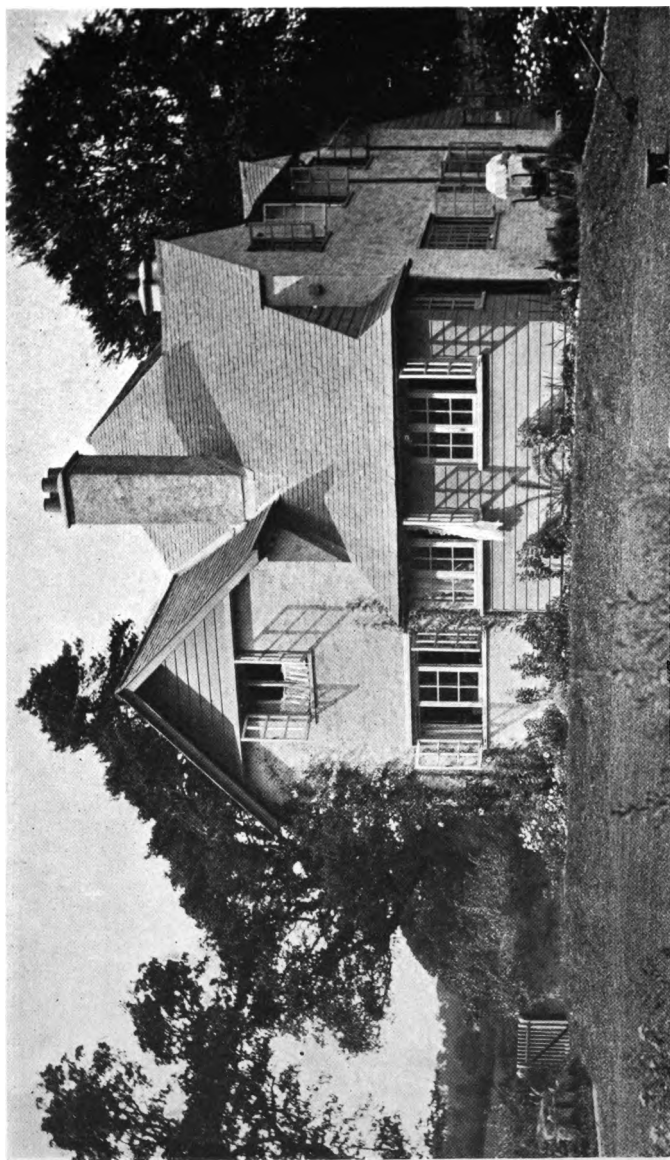
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THE SMALL HOUSE.



A CURATE'S HOUSE IN SOUTH DEVON.

The walls are of brick, and they are "scattered" with cement and sand, and then whitened. The roof is covered with grey Delabole slates [Frontispiece]. This is one of the most inexpensive methods of building.

©

THE SMALL HOUSE:

ITS ARCHITECTURE
AND SURROUNDINGS.

BY
ARTHUR MMARTIN.

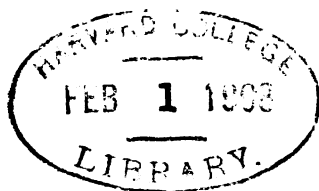
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PREFACE.

IN writing the following pages, every endeavour has been made to adhere to two conditions. First, that the book was to be for those who wished to build for themselves; not for their architects, nor for speculators. In fact, it was to be a guide for the client to the line of thought generally adopted by the architectural profession on the subject of building a home. Secondly, that only a single class of house was to be discussed—namely, one designed for gentlefolk and their servants, but not costing more than about £1000.

It has ever been the case since the architect became a professional man, and ceased to employ his own masons, that one of his chief difficulties has been to impart to his client a proper understanding of the building he proposes to erect. Plans and elevations give a diagram of the dry bones; a perspective view may give the general outline, but neither of these will carry any conviction to the lay mind without some vision of life as it will be in the completed building, or unless each drawing and architectural conversation carries with it the scent of real bricks and mortar.

The result of this difficulty has been twofold. On one side it has spread an unwholesome view of what domestic architecture means; and on the other side it has produced apathy, and eventually ignorance, on the whole subject.

Under the first heading some of the worst offenders are those with distinctly artistic proclivities, for their intense æstheticism is quite beside the point when dealing with domestic architecture. They would like to crowd their homes with cosy corners and wavy lines. But then, proving themselves to be still artists, they find that ordinary furniture is impossible, and content themselves with a bench, a few stiff chairs, and a cottage table.

But healthy design should invite—nay, be incomplete without—all sorts of beautiful ornaments and the most refined furniture. Our rooms must not themselves set a limit to our æsthetic dreams, but form a permanent and restful base from whence we can sally forth in mind into the mysteries of science, art, and literature.

There must be no jarring note, but breadth of conception; for no mannerism, no artistic simplicity in our surroundings, no staying at home in mind or in body, can ever take the place of wider interests in life. Art is not life, but one of the best aids to living well.

On the other side there is the man of a strong business disposition, who wants a house and comfort,

but politely declines any knowledge of, or wish for, "art" in his home. So often those who have gone on their way minding their own business, and doing work they really understand, have, when it comes to the point, a very wholesome view, if an uneducated one, of what is artistic and what is not.

This book in a rudimentary way attempts to show to both classes what is meant by "the architecture of small homes," and in what direction an architect's aspirations tend to lead him when dealing with this interesting side of his profession.

My thanks are due to all those of my fellow architects who have allowed photographs of their work to appear, and also to those owners, who put up with the inconvenience of having their houses photographed, and not unfrequently rendered assistance in the operation.

Especially are my thanks due to my brother, the Rev. J. S. Martin, who not only took the majority of photographs for me, but also gave me in the chapter on wires his experience as an electric light and telephone foreman under a London firm of engineers.

ARTHUR MARTIN.

LONDON, *June*, 1906.

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THE SMALL HOUSE.

CHAPTER I.

THE IDEAL OF A SMALL HOME.

DOMESTIC architecture in England has, we are told, made great advance in recent years, and is now some of the best in the world. If this is the case we may profitably inquire, without comparing ourselves with other nations, what ideals we have on the subject, and whether we are on the right road; for the great majority of modern houses still seem to have no great claim to inspiration.

Church architecture, on the other hand, in spite of much poor work and just criticism, has never entirely lost touch with the deep inspiration of Christianity. The discipline and faith of the Church has never ceased to raise men above the pettiness of the present, and more or less faintly to reflect in her new buildings the enthusiasm of the great bishop-builders of the Middle Ages.

But while Church architecture in its worst period had always a definite object in view, and consequent dignity and restraint, domestic architecture, more especially amongst smaller houses, has gradually

shaken itself free from discipline, until it now wanders along many diverging paths, seeking excellence in vulgar excess or deliberate novelty. Refinement and unaffected simplicity are, alas! in these days, the exception in domestic architecture, and not the rule.

It is many years since English architecture was first found to be suffering from decline. Early in the nineteenth century, when Georgian work was becoming coarse and uninteresting, doctors prescribed Grecian forms and Grecian mouldings as a safe diet, being followed by the Gothic revivalists with their teaching; but, in spite of much advice and occasional exhibitions of remarkable vitality, domestic architecture, as a whole, showed no signs of recovery.

Then in recent times, when one school was preaching salvation for architects in a knowledge of the history of their art, another regarded knowledge of construction as the one essential, and a third devoted itself to personal skill in the various crafts. Some architects with work on hand tried to include all three, while a small section in despair attempted a primeval simplicity, as if architecture were dead, and had to be evolved afresh.

The speculating builders' point of view of house-building, and that of some private owners, was far simpler, namely, "so much cash value in bricks and mortar, giving a net return of so much per cent."; and, without losing sight of their businesslike reasoning, their ideal might be improved upon.

Yet, while architecture has been struggling for existence among the ignorance and commercialism

of the present day, one qualification of the architectural profession has risen by leaps and bounds into a remarkable state of perfection, rather at the expense, it may be, of other attainments. Architects can draw, not only new buildings, but old ones too, even imparting to their sketches that spirit of life and interest which is so often lacking in their work when carried out in bricks and mortar.

Perhaps the bad influences of this qualification have to work themselves out before good can come; but certain it is that those interested in architecture are constantly misled by these sketches into a false view of what architecture is, and those who think of building must be especially on their guard. Examples may be constantly seen in exhibitions and magazines of sketch designs which, were there no label, would appear to represent picturesque old work, venerable in a quaintness born of gnarled oak timbers and weather-beaten roofs. Such quaintness cannot be introduced into a new building, even were it desirable to do so. Every bit of picturesqueness must be left to time and nature. Nature will embellish our work with unstinted beauties as the seasons come and go if we build without affectation, appreciating the beauty of our materials and the true relative value of the house to its surroundings. Nature's is the only picturesqueness that gives no offence.

The spirit of domestic architecture, however, that appears so clearly in old manor-houses, but is so elusive in our grasp, is not summed up in picturesqueness; indeed, it is often independent of it, as it is even of the architectural features. The charm lies

rather in the evident sanctity of the home life in the old days, emphasised by the care bestowed on the building by succeeding generations. Something in the old place evokes a powerful undefined sympathy for the simplicity of life and thought recorded around us.

There was never a truer saying than that the main-spring of our English nation is the life of the family in our English homes. Some may have never realised what their home has done for them, but very few have been without its charm and influence. After the old home, with all its associations and interests, has broken up, and when each member of the family has formed a new world, with his own circle of friends, still the original family life remains not only the foundation on which he builds his character, but the root from which grows all his broader interest in the life of the nation and the world around him.

Considering then what a powerful and ennobling force lies within the idea of "home," just as a vast depth of meaning lies behind our conception of a church, can we not consider our house as the material representation of this home life? After building ceased to be controlled by religious houses, it was still the sanctity of the home, and devotion to high ideals of life, that inspired the designers of our manor-houses. This naturally became reflected in the cottages, built on simpler lines by the masons who had been trained on the larger work.

If we think how the sight or thought of some feature in the home brings back old associations and the vivid recollection of incidents we had forgotten, we see how close is the connection between the

features of the design and the family life. In our first conception of our building, and while discussing the details of the various portions, we must remember that every nook and corner in the house and every turn in the garden path is destined to be a matter of history as we, or our children, look back in after-years ; and it may be they will form the children's first recollections, and remain for ever the type with which they compare all other houses.

The more clearly we can keep in mind, when building our home, our ideals of family life as opposed to the humdrum round of business and the whirl of society, so much the better chance we shall have of possessing a house of which to be fond and proud, whether it be a cottage or a mansion. Our house must faithfully reflect our life at home before all else ; and what we are in the world must, here at least, come second.

But having started with some of the higher aspirations of home building, we must turn for a moment to the other end of the scale, and consider the question of money, which is too often fatal to noble conceptions.

The average Englishman is by nature reticent, and very loath to discuss matters of his private exchequer, even with his best friend, so he must settle this question of finance by himself. Besides, friends are generally short-sighted and unpractical in such matters, so the only person who can, with real advantage, be consulted on this point, is the solicitor. He will keep the secret if necessary, and can often realise the true value of an income, with its liabilities and prospects, better than the owner himself.

Now the expenditure, while it is not affected by the ideal we may have of what home life should be, depends directly on the size of the structure; and the size must be considered, though we need not picture to ourselves at this stage the ideal *house*, for that is chiefly the architect's business and will come later.

We must ask ourselves these three questions:—What accommodation will be necessary, what standard of comfort shall we require, and what idiosyncrasies have we to be satisfied?

Some build merely for their own greater luxury and comfort; some, perhaps a large proportion, build for the benefit of a wife or family. Others have as their motive keen country instincts, a love of gardening, a love of country sport, or a thirst for nature, with her flowers, woods, and birds. Whatever it is, the prime motive for building must be ever before us, and had best be made known eventually to the architect, for nothing is so effectual in getting his full sympathy and best assistance.

Shooting-boxes, week-end cottages, and seaside bungalows, do not properly come within the subject of this book, as they all imply that the "home" is elsewhere. It often happens, however, that a little place in the country, originally intended to supplement a town house, gradually supplants it in the affections of the owner. Immediately then the cottage becomes the true home, in which he rests from the cares of the world. Time spent in the town house dwindles to the bare necessities of a business, or the exigencies of theatres and society. In fact, the town house becomes a small private hotel for the owner and his family,

and is often, as we know, without any pretensions to homeliness.

Having got a clear grasp of how we intend to use the house, and how much accommodation we require, especially the number of bedrooms, it should not prove a very difficult problem to discover approximately how much the house will cost to erect. The most obvious method, that of comparing our requirements with the accommodation of a house of which we know the price, requires great caution. Often and often people are misled in this way, for it is very difficult to detect the inadequacies of another's house, and almost impossible to compare the cost of building in different neighbourhoods.

A much safer way, if we have selected our architect, is to pay him a short visit at his office, when a little friendly conversation will enable him to give us a rough idea of the cost of similar houses, and the reasons why they were so expensive or so cheap. He will grasp more readily than any of our friends what sort of a house it is to be, if only we are honest in telling him all our wants. The cost of a house may easily vary 50 per cent. according to the way it is built, but those illustrated vary from £80 to about £120 per room.

More difficult than reckoning the initial cost of the building is the calculation of what must be allowed for running expenses. It is a matter often quite overlooked when it sometimes comes as an unpleasant surprise. We must reckon what we can afford to keep up after spending so much capital on the house and garden. And when the sum is once settled we must stick to it.

The temptation to enlarge will be very great when the flood of advice from friends is let loose ; and panic is apt to get the better of reason when the house, looking about the size of a cabman's shelter, is pegged out on the green turf. This deception in size always occurs, so the architect or the figured measurements must be trusted.

At the last moment orders are sometimes given for an extra foot here or six inches there, or even another bedroom upstairs. The extra outlay may seem small, but experience and exceptions both prove the rule that every inch added to the size of a carefully planned house adds proportionately to the cost of annual upkeep. The servants' labour, for instance, is slightly increased every day in the year in cleaning ; the amount of artificial light used will not be lessened ; while larger carpets and more furniture will be required, and will have to be kept in order ; and on each occasion of entertainment there will perhaps be just room for one more guest. And so, apart from rates and taxes, the increase of annual cost will be fully in proportion to the extra size.

Do our means justify us in attempting to realise our ideals ? For we must not be like the average business man, who only finds partial satisfaction in his new " stock-pattern " house because, quite unconsciously it may be, he is warping his ideals to fit his house and surroundings.

It must be our own and our architect's chief care to make the new home absolutely suitable for our individual requirements, of whatever they may consist, not too small nor too large. No artistic merit can

condone the blunder, artistic as well as practical, of overbuilding, and no excuses will be made for us by our neighbours, if we do so. They will judge, and rightly so, by the size and pretensions of the home when discussing its owner's circumstances or character; and if the servants are not up to the mark, or if the rooms are not spotlessly clean and tidy, they will pass judgment without asking any questions about means.

Before we start on the description of building in detail, perhaps a word as to the position of the architect will not be out of place, for some very hazy ideas exist on the subject.

At any rate in building a home a complete understanding between the client and his architect is essential to the production of a successful design; for without it even *carte blanche* would be quite unavailing in the matter of homeliness, and in satisfying the requirements of the owner and his family.

We may expect and demand from the architect a house that fulfils *our* ideals of a home, and satisfies *our* requirements. We hear too much about the architect's individuality, and it is often so marked as to altogether obliterate that of the owner, although that of the owner is far more vital to the success of the new home. Still we must treat the architect as an expert, who is finally responsible for the result; and, unless we are prepared to do without him altogether, and design the house ourselves, he must have the last word.

An architect is not only a person who is employed to make dull working drawings, and keep a sharp eye on the builder; he is much more than that, especially

in building a homestead. He has to produce the ideal *house*, an important part of our whole conception of the home which we wish to possess. His duty is first to guide our ideas, then to give us ideas, and finally to produce a concrete realisation of them. Unless we are prepared to freely discuss the home with him, and unless we tell him every whim and fancy we may possess on the subject, he starts on his work most seriously handicapped.

There is no abstract ideal of a perfect house in the architect's mind, awaiting realisation; on the contrary, the design will be the direct outcome of the various aspects of the problem as we present it to him.

The architect must not only appreciate our motives in wanting to build, but must also have an insight into all the household arrangements; and for this reason it is almost essential that he should be in touch with the lady of the house, otherwise the kitchen range will be too large, or the blanket cupboard too small.

The choice of an architect is no slight matter, for it is not enough to know that we like his work, and that it is good. We must also know that he is a man with whom we shall not mind discussing what are purely family matters, and that he will enter into the spirit of it with genuine enthusiasm.

It would be quite useless to go to the first local surveyor just because he is handy, or even to a busy man with a number of desirable letters after his name, unless we are quite sure he will stoop to listen to the little tale of our ambitions.

If our ideals are based on some house we have seen,

we must tell the architect, and take him to see it. Nothing creates greater misunderstanding than for a client to be curiously specific in his requirements without, as it seems to the architect, any reason.

Finally, we must be sure of our architect. Nobody requires warning that this is an age of secret commissions and artistic absurdities.

Let us build thoughtfully and truthfully, making our home worthy of the family life inside, and worthy too of nature, on whose assistance we depend to tone and soften all the garishness of new materials.

The house, whether facing the high-road, or tucked away among the hills, will remain for future generations a witness to our enthusiasm for home, and to our belief in home life as the purest source of English greatness.

CHAPTER II.

LOCALITIES AND SITES.

IN the first chapter we were considering points on which we could expect to receive little assistance from our friends. They were essentially personal questions, but when we have once settled them satisfactorily, much help may be gleaned from the advice and experience of others.

At the same time it should be remembered that no one else has exactly the same view of life as we have; and the greatest care should, therefore, be exercised to retain our own ideal and personality.

Many, for instance, will be carried away by some feature in a friend's house, or effect in an old garden, and will endeavour to adapt their scheme to include it, too often with the result that the house is built round one feature, and that unsuited to the site selected.

When the choice of site is under discussion, and all through the building of the house, our individual ideas and general scheme must be kept constantly to the front, or the inevitable result will be a patchwork of bits obtained from other houses. Although it is the keynote of many designs of recent years, architecture is something far higher and nobler than the cleverest patchwork.



A SMALL HOUSE AT WEMBLEY, DESIGNED BY MR. H. FARQUHARSON.

It stands on a site only 36 feet wide, between an old and a new house on either side. It is an example of what can be made of a new suburban "villa." The house is "roughcast" with a brick base, and a roof covered with old tiles. A plan is given on page 14.

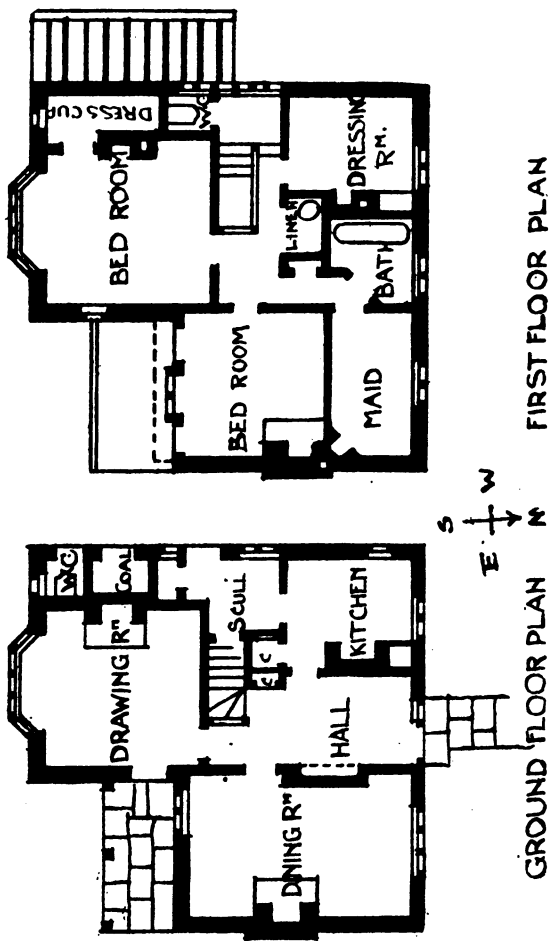
[Plate II. to face p. 12.]

In the choice of a locality and site, however, we must be somewhat dependent on the advice of friends, for it may happen that, while the question of county or district has been settled on the first thought of building, we know the selected neighbourhood but slightly.

Some district or other is certain to appeal to us more strongly than any other, in each case probably for a different reason, and there is no space here to even glance at all the more attractive parts of England. The variety is almost endless—the well tilled fields and village greens of our southern counties, the flat fen country with its windmills and vast expanse of sky, the Yorkshire dales, or the sunny slopes of Dartmoor, are each beautiful beyond imagination. Wherever we go, nature seems bursting with life, and we may be sure that, whether in vale or upland, she will meet us more than half-way in our endeavours to make our home an added harmony to its surroundings.

We have selected our district, and we next have to find a suitable locality and site. First, then, we should make ourselves well acquainted with the district. Every highway, by-way and village, must be explored ; and this can only be done by either putting up at an inn for a few days, or better still, by visiting some friend in the neighbourhood who may be able to help and guide us in the search.

If local estate agents exist, they should be tackled with care, for, while they will be most anxious to accommodate us, there is no need to accept too readily all they offer. We shall be in a better position if we know the neighbourhood thoroughly, that we may be



THE PLANS OF THE HOUSE FACING PAGE 12.

able to discard at once what would be obviously unsuitable.

Should these methods fail, it may be possible to

enquire of some friendly farmer, or the old lady at the village post office, to whom likely plots of ground in our chosen neighbourhood belong; but this, too, must be done with circumspection, or the plot will be found to have a curiously enhanced value in the eyes of the owner.

There may be the choice of a dozen different sorts of locality within the radius of half a mile, for it is the immediate surroundings of our plot of ground with which we have to concern ourselves.

As soon as we are offered an eligible site, the locality should be thoroughly investigated before we commit ourselves to further negotiations.

Suppose the site to be in a village, the village, perhaps, in all the world in which we should like to live we think; we love the old cottages, the village green with its traditional geese and donkeys. It is conveniently near, or remote from, our friends, and the station; and a beautiful old church, with its square tower and jackdaws, gives the place just a touch of historical significance.

But we must be critical, and see to it that such excellent institutions as the public-house and village school are at a safe distance from our suggested property. Again, no one will care to be overlooked, even by a cottage neighbour, or to have that neighbour's washing fluttering too obtrusively near his best windows or tennis lawn. The objection to farmyards may be less universal, but our future visitors will not appreciate a night's rest broken first by a restless calf, and then by a chorus of ducks in the early morning; and the farmer's chickens are apt to find well-kept

flower beds more attractive than their legitimate rick-yard. Cottage neighbours also have a way of keeping pigs and poultry, without regard to their neighbours' comfort.

A sharp eye must be kept on all ditches and any stream in the immediate vicinity, for some of our prettiest villages are still sufficiently out of the world to have primitive schemes of drainage, and no bye-laws to enforce proper sanitation.

Finally, there is the danger of other buildings being erected unpleasantly near, on land over which we have no control. If the village is really in the depths of the country this danger may be remote, and safely risked, for, with a few years' start, a good deal of protection can be secured by judicious planting of trees and shrubs.

If, however, we are building on an estate which the owner is gradually "developing," it is impossible to make too many enquiries, or to require too legal a guarantee as to what class of house is to be built near. A good locality may be ruined in a couple of years, should a cheap class of houses be permitted by the owner of the land. He generally makes a number of more or less stringent conditions when selling plots which must be carefully weighed; and, if satisfactory, an undertaking should be required from him that they will not be altered for future investors without our consent.

Should the selected site be on a main road, some little distance, perhaps, from any village or other buildings, the locality will offer fewer possible objections. The road itself will be the chief consideration,

and the purposes for which it is used. Muddy roads we are doubtless prepared to face, but no one ever yet liked a dusty road. Traction engines and heavily laden farm carts have a way of breaking up all except the most carefully kept metalling, and then comes the motor, raising a cloud of white dust which in a favourable wind will smother our garden. As the house is small, the site will probably be quite small too; and, until our roads are improved up to the standard required by modern traffic, the difficulty of dust will be severely felt by many small householders along the main highways.

Another disadvantage in a site on an important road is annoyance from barrel-organs and tramps. It is well known that the tramps emigrate from the large cities as the summer comes on, chiefly, of course, along the main roads; and in certain districts, if there are no men about the place, these individuals may become more than a nuisance. It may be possible to select a site which is quite accessible for ourselves and our friends, and yet is just out of sight of the main road and out of reach of the noise and dust of passing motors.

Still further afield, among the heather of the moorland, or under a spur of some range of hills, there are likely to be still fewer objections to the locality. Access to the site must, of course, always be easy, for road-making is far too expensive when so small an outlay is contemplated. Loneliness may be the attraction of the situation, but the locality ought always to be carefully examined that the possibility of disturbance may be realised to the full; and we shall, on the other hand, want the postman to reach

us even when there is a foot of snow on the ground, and just occasionally we shall ourselves have to get to the nearest railway station. It is even worth enquiring in such a place about the local rifle range, for that should not lie between us and our prettiest moorland walk.

The site itself may next be considered, and it should have eight good qualities.

1. A good subsoil.
2. An adequate supply of water.
3. A workable means of drainage.
4. Accessibility, that building may be reasonably cheap.
5. A good top soil wherewith we can make a garden.
6. An interesting outlook for the best windows.
7. Protection from the cold winds.
8. A good position and setting for a house, as seen from the road or the garden.

The nature of the subsoil is now generally recognised as important on all building sites, and rightly so, for the healthiness of the district largely depends on it.

The best subsoils for all purposes are gravel, chalk, and, if covered with a strong top soil, a good stiff sand. While they make drainage easy, they also give excellent foundations, and the site will naturally be dry. A solid rock, of course, makes strong foundations, but levelling the site or cutting for drainage may make the building expensive. Care should also be taken that our foundations do not pond back any trickle of water, such as is often found on the surface of rock in wet weather. This is apt to cause dampness, and even to weaken the footings of the house.

A poor rock or shale makes a good building ground, and the only suspicion attaching to these is that of becoming water-logged in wet weather.

The commonest soil in England, however, is clay. There are many forms in which it is found—pure clay, clay mixed with gravel, clay and flints (above chalk), and sand and clay. Being impervious to moisture, though always damp itself, all surface water has to drain off clay instead of sinking into it; and it is the peculiar dampness resulting from this that makes it impossible for some people to live on a clay subsoil.

While there may be a difficulty of disposing of drainage satisfactorily to ourselves and our neighbours, clay makes an excellent foundation. The one necessary precaution is to put the footings low enough to be out of the reach of the baking summer sun, or the clay will shrink and cause a settlement in the wall above. A serious settlement occurred a few years ago during a dry summer in a house near London; but the owner was an engineer, and guessing what had happened, laid on the garden-hose all night, so as to water the foundations at the spot affected. The next morning, not only had the settlement ceased, but the cracks had all closed, the water having expanded the sun-dried clay below.

A plentiful supply of water is, of course, essential to every site, and its existence should be determined at once. There may be a local water company to get us over this difficulty; but the water supply should be one of our first questions on considering a site. No general rule can be given as to the possibility of a well, but it may be taken for granted that boring

solid rock would be too expensive, and sinking a well in blue clay quite futile. We had best ask the neighbouring farmer what he thinks. It may then be desirable to get a local geologist's opinion, or even employ a "dowser" to test the site with his magic wand. The matter must be settled, beyond doubt, before anything else is done.

The storage of rainwater is always useful, and may even take the place of any other supply. The storage in this case should always be in underground tanks, sufficiently large to hold five months' supply. If properly treated it makes excellent drinking water; but great care should, therefore, be taken to make the tanks watertight, and to see that the filter-beds are kept clean.

Pumping a water supply from even a short distance would certainly cost too much in plant and maintenance; but with a strong stream, which we can be sure is unpolluted and which will not run dry in a hot summer, a small hydraulic ram may be put in, and kept going, at less expense than that of paying a man to pump from a well each day.

The site must next have such a top soil as will make a good garden, and in England this is not often a difficulty. Chalk downs, on which the soil is often only an inch or two deep, are apt to be deceptive in this direction; and the soil in some gravel or sandy districts also is so poor as to require a great deal of attention before it would provide flowers and vegetables. Carting in good earth except in small quantities will be found rather costly, and buying a lot of manure still more so.

Another quality of the good site is an interesting outlook, perhaps amounting in one direction to a "view." Nothing is more pleasant after reading or writing than to get up and stretch, not only one's limbs, but the eyes and mind, right across to the next ridge of hills. If the house and garden are sheltered, it is delightful to watch cloud and sunshine over a distant view, an ever-changing study in colour.

The view should be seen from the best rooms, and a small window must be provided on purpose, if the aspect forbids our putting the principal windows in that direction. Herein is one of the chief advantages of a site on a southern slope, for the south windows of the sitting-rooms will then look out over the garden to the view beyond; and if we can find a site on a southern slope, with the road on the north of the site, we shall get an unbroken sunny front to the house and seclusion in the garden.

Views are highly prized in these days, though they seem to have been little accounted of when some of our most charming old manors were built.

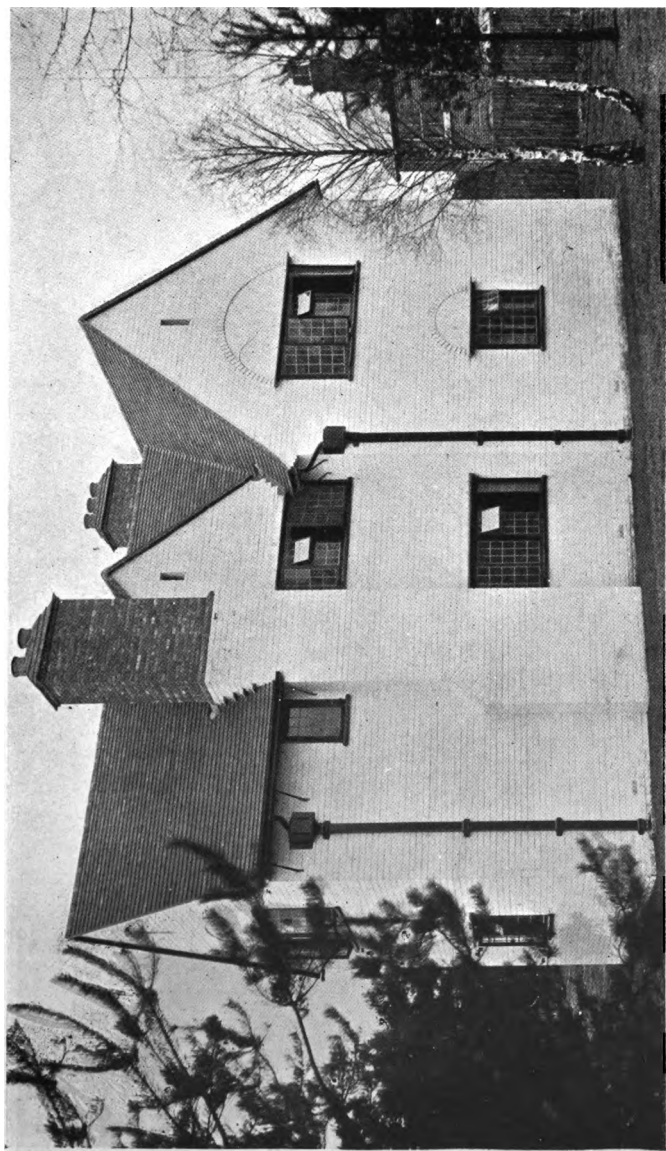
For these, the length of a village green, or one short reach on the river, was often deemed sufficient view; but, to make up for this, the old men were masters of the much more difficult art of placing the house well on its site. Their success seems to have chiefly lain in the use of the natural features provided. Their buildings stand beautifully from every point of view; and whether they are among the hills, or in a flat field, their success is equally conspicuous.

Our want of success in this direction seems to lie in

our failure to recognise nature as the predominant factor in the design. Some staring tile roof, or much designed architectural feature, is constantly asserting itself in modern buildings, in violent contrast to nature all around. If a formal architectural feature is required—and it may be quite legitimate—a formality in the garden, terraces and balustrades, must intervene between it and the natural growth beyond. We recognise this in large houses, and, when cottages ape the country mansion, they must submit to similar restrictions.

But of all sites the most charming and most easily made beautiful is the site of an old cottage. A well-established orchard, again, offers all sorts of possibilities in laying out the garden ; and a few old walls, a duck pond or a yew hedge may become the nucleus of a design full of interest and beauty.

We shall in such a place experience the fascination of coming across signs of a previous ownership ; and we shall feel, what is so often wanting in a new house, the human interest of a link with the past.



THE SOUTH FRONT OF A HOUSE AT CROWTHORNF, FACING TOWARDS THE ROAD (SEE PLAN, P. 24).

This is an instructive example of a new house, hardly out of the builder's hands, and before it has been toned by the weather, or softened by the growth of creepers. [*Plate III. to face p. 22.*]

CHAPTER III.

THE PLAN.

BEFORE attempting to consider plans in detail, we must first appreciate some of the principal aspects of the problem they present.

There are three forms of difficulty in making a plan, which are found in varying degrees in every design. First: The plan regarded as a sort of Chinese puzzle, resolving itself into the science of easy communication between the various parts. Secondly: The plan in relation to architectural composition, both internal and external. And Thirdly: The plan in relation to the cost.

THE PLAN AS A PUZZLE.—In treating the plan merely as a puzzle, we leave all architecture for the moment out of the question, simply endeavouring to find the best arrangement of the various component parts to give a workable house. Rough plans of this class are sometimes submitted by amateurs to their architect, and, whether workable or not, they certainly help him to fathom their ideas.

It is in this aspect of the problem that the architect is most dependent on instructions from the owner, for hardly any two families really require the same sequence of rooms, however used they may be to putting up with what they find.

But we will discuss the component parts of the plan in detail later on ; here we will only consider a few general principles bearing on the relation of the plan to the site.

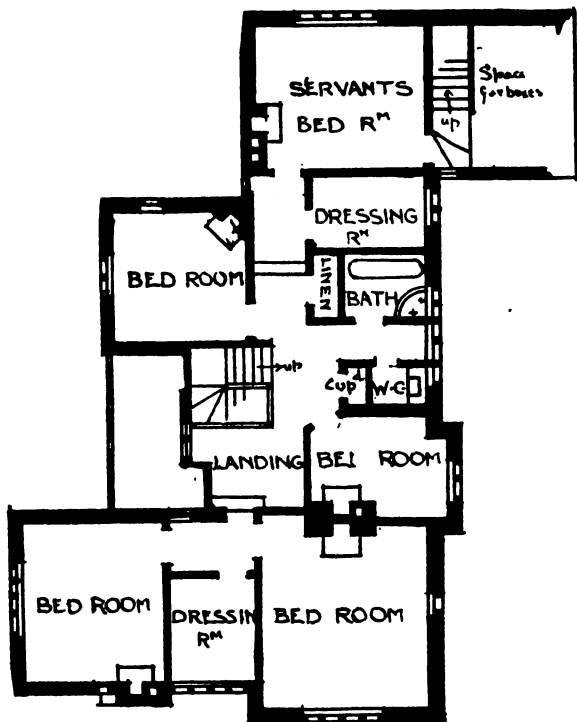
Apart from any architectural considerations, our plan must provide an entrance conveniently placed for the approach from the road ; and this must, if possible, be combined with privacy for the garden front, and a sunny aspect for the sitting-rooms. With this we must allow facilities for a compact and simple scheme of drainage, kept away from the garden front, and away also, if possible, from the front door.

It destroys the privacy of the house, and is not very pleasant for callers, to have the front door close to, or in full view of, the sitting-room windows. The drive, again, should not be allowed to encroach on the garden, for in summer time we may not wish to be surprised by visitors if we are sitting out of doors.

If our site is a small one, it simplifies the puzzle plan very much to have the road to the north of it ; the front door can then be on the north side of the house, while the sitting-rooms and garden lie to the south.

But it is only too likely that in our chosen site this may not be the case, when various expedients have to be resorted to. The plans of a house at Crowthorne (on page 24) show a narrow site with the road on the south. The house was therefore placed so as to allow a carriage just to turn between the house and the fence on the east ; this allows the front door and the drive up to it to be on one side, saving to some extent

the privacy of the south front. The garden in this case was mainly to the north, which accounts for the north windows in the drawing-room and study. This



THE FIRST FLOOR PLAN OF THE HOUSE AT CROWTHORNE.

is a single type, but a common one, of an awkward site for those who seek privacy in their house and garden, although it is admirably adapted to the "double fronted" villa of a few years ago.

THE PLAN AND ARCHITECTURAL COMPOSITION.—The plan is the essence of design. The general mass, the individual elevations, and the interior effect all depend primarily on the plan; it is the basis of all architectural expression and beauty.

It is not sufficient that the house should be well built and that communication between the rooms should be simple, the plan must also be architectural. It is being dimly realized, even by those whose interest in architecture is limited to the rental return on the outlay, that architectural dignity and proportion enhance the value of a well-arranged house.

It is something that at once recalls the "deference due" to the owners, that imparts to each detail a well-bred air of significance. Let no one think he can do without this refining element in his home; that he does not appreciate, or cannot afford such a luxury. It may be something difficult to define at first, but when the novelty of the new possession has worn off, good proportion tells in a most surprising manner.

Novelty soon ceases to attract, quaintness soon palls, but, whether the mind is artistically inclined or not, architectural dignity and careful detail both grow on one year by year.

THE PLAN IN RELATION TO COST.—We are dealing with small houses, costing up to £1,000, so the necessity for economy is taken for granted, but the danger to-day is one rather of succumbing to this necessity than of forgetting it. When there can be no elasticity in the sum available for building every precaution must be taken to ascertain that it is sufficient to build a suitable house, and to build it well. A well-built

house, if of good design, may always be regarded as a safe investment, especially if suitable for our own habitation. Will the sum available be sufficient for such a house? for temporary structures are only for the wealthy.

The difficulty, of course, arises when the money is not enough. In this case the only alternatives are either to build an inadequate house, possibly with a view to future enlargement, or to wait on in our rented dwelling till better times.

Here the question presents itself, "Could I live in a smaller house? Could I do without a spare room? or could I manage with only one servant?" All sentiment on the beauties of home and the simplicity of country life may be dismissed at once; it is a practical question turning on "who" and "what" we are, and what our motives in building may be.

The fact is more and more apparent that the average man, with a life full of interests, requires more than a cottage in which to live. An idle day or so under a thatched roof may charm and refresh our weary brains, but more than this is required of the home. It must be a house that is adequate in every way for ourselves and our household, in all weathers and in all moods.

We must not be misled by our friends' use of the word "cottage," for many cottages are so only in name. In these the owners live luxuriously, while surrounding themselves with cottage fashions and cottage furniture, the "expensive simplicity style," as it has been called.

But why should the cottage form the type for our home? It savours of the artificial. Surely the small

manor house is more suitable, however plain and simple it may have to be. The average public school and university man of to-day is the representative of the "Squirearchy" of former times, and his home should be a development of the old manor house both in plan and feeling. Skill in planning may have advanced, but the ordinary type of villa, so frequently met with, seems to be a development of the cottage rather than of the manor. Doubtless it was primarily a question of supply and demand, but there can be no doubt that in many cases the glorified cottage has been thrust, by architect or builder, on those who should have known better. We see this in the inadequacy of the kitchen premises, which are often in undesirable proximity to the front of the house; and so often the front door opens into a passage with rooms on either side, dignity of entrance, seen in every old house, being entirely lost.

But we will now turn to these details and discuss them in order. We may remind ourselves at this point that there can be no such thing as a sample house; each design will be made under different conditions of site and circumstances and of the owner's personality. We can only discuss the details of a house in the abstract.

THE PORCH.—There are certain features, such as the porch and verandah, which are very apt to appear as excrescences from the main building, and great care should be taken that this danger is avoided, either by allowing the main roof to reach out over a low porch, or, perhaps, by carrying it up two stories till its eaves are level with those of the main building.

The porch, as it is the first part of the interior seen by the visitor, should be treated as a transition between the garden and interior. It must be roomy, therefore, rarely less than six feet wide inside, and it must also form a real protection from rain and wind both for the front door and the visitor waiting outside. While the walls will probably follow the character of the outside, an internal feature like a plaster ceiling may well be introduced, with perhaps a pebble paving laid to a pattern.

A seat, without arms to get in the way, down one side will be found useful for a variety of purposes, and in no way to cramp the space available for walking.

THE ENTRANCE.—On the porch side the front door should appear massive, strength being more important than any ornament. A wide low door of heavy appearance, and perhaps studded with nails, at once declares that the house is worth entering, but at the same time gives no hint of what we have to expect inside. Glazed front doors should be avoided. The view when entering should be fully realised in the plan, for a glimpse of a cheerful fire, or a red paved corridor with cross lights, and perhaps a plaster vaulted ceiling, create an impression of homely hospitality which a mean entrance must always lack.

The smaller the house the more carefully must we avoid a cramped effect ; and remember that the porch and entrance will either make or mar the house in this respect.

A porch will generally make an inner door unnecessary, for a lobby and inner door in a tiny house are very awkward unless out of proportion to the size of

the hall. Once inside, with the front door shut, we must arrange plenty of space ; the visitors may want to take off wraps, and the servant has to pass them, after closing the front door, in order to show them into the drawing-room. There must be a place for umbrellas and a table, or at least a chair or two, on which to put down a cloak.

THE HALL.—When the hall is to form one of the sitting-rooms much greater use can be made of it if an entrance lobby is arranged outside. This will provide space for hats and coats, and ensure privacy to the occupants in the event of a note or message being left at the door.

The sitting-room hall may well be a passage room to both drawing room and dining room, but it is better to keep the staircase out of it, if possible. Stairs in a tiny house are most convenient when leading up from the entrance lobby, to which the servants have access without passing through the hall. This enables the parlourmaid to answer the door, and also, where there is only one staircase, to gain access to the bedrooms above, without passing through the hall. In any case the staircase should be so arranged as to enable people to enter or leave their bedrooms without being within sight or hearing of those sitting downstairs.

The hall sitting-room is a charming feature, but a certain amount of privacy, and a careful arrangement of the fireplace in relation to the windows and doors, are both essential to success. It is a feature that requires more skill in planning than it usually receives.

The alternative is the lobby hall, merely a connecting link between the various parts of the house. In this lobby everything will depend on the arrangement of the doors; the front door will open into it, and the other doors out of it into the various rooms; and we must arrange accordingly the wall spaces for table or chairs with ample light and elbow room all round. The expression "elbow room" may be taken literally, for low pieces of furniture, such as table and chairs, being below the average elbow, can often be put where a tall book case or chest of drawers would be most inconvenient.

It is sometimes possible to enlarge the effect of an entrance lobby by placing the staircase next to it. It is better not to throw the two spaces into one, but to have an arch from the one into the other, as has been done at the house at Crowthorne (see Plate 7, p. 76). This preserves the privacy of the stairs and landing above to some extent; and, while it will form an interesting feature to a visitor, his interest will be the more keenly aroused by the fact that he is unable to see the whole.

THE DRAWING ROOM.—The room where we shall receive callers will always be in use on that account during the afternoon, and it should therefore have some western sun if possible. The parlour would be a much more suitable name for this room, for, being in no way reserved for the entertainment of visitors, and in use more or less all day, the only distinguishing mark of the room is its dedication to the ladies of the household.

The windows should look on to the garden, and

access thereto should be direct, or at any rate very easy. Care should be taken in arranging the windows, for, while sunshine is so desirable and so attractive, there is danger lest we should over-light the room. If possible let the principal light be from one direction, and keep all other light quite subordinate ; this always helps to make a quiet room.

But of almost greater importance than the aspect is the position of the fireplace. It should be as far from the door as possible, but yet it must not be in the same wall as the chief windows. In placing it, imagine a large circle round it on a cold Christmas eve, and arrange that no one shall be either close to a window or inconveniently near the door.

This brings up the question of outside chimney stacks, and we may well settle it on the plan, for it will arise in each room. It is commonly said that all chimneys should be on inside walls, the sound reasons being given, first, that they help thereby to warm the house, and second, that the flues will be less inclined to smoke. But there are other points of view, the most important being that as the door must enter through an inside wall, the outside stack is demanded for the comfort of the room, or else in a small house the fireplace and door are inclined to be unpleasantly close to one another ; and even if the difficulty is surmounted downstairs the bedrooms will certainly suffer. Then again, the flues of an outside stack would naturally be on the inside of that stack ; and surely the fact of our having so much less chilly outside wall nearly makes up for any slight loss of actual heat.

Outside stacks are not in themselves more expensive than others, but if we take the tempting opportunity to make a feature by boldly projecting them beyond the face of the wall, we shall of course have to pay for the feature; and it is generally worth it.

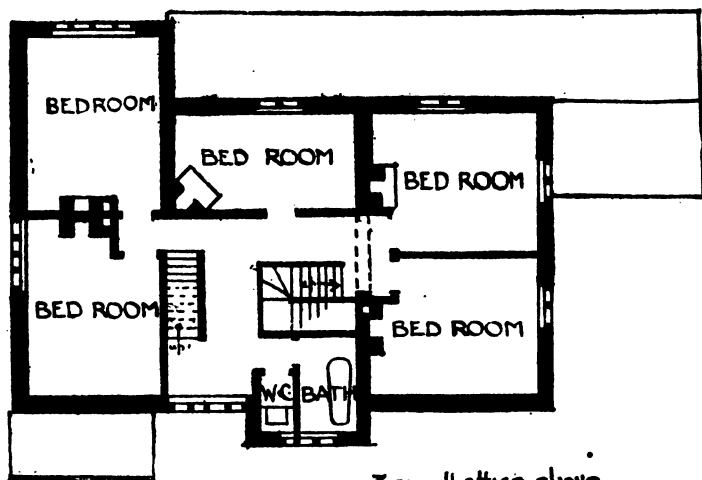
THE DINING ROOM.—We may safely suppose that we shall never from choice dispense with central table to dine in a recess as is advocated by some. A tiny well-planned dining room is the cosiest of rooms, and most useful for many a purpose besides meals.

The table is the feature that governs it; so much so, that the minimum width may be determined by allowing 3 ft. 6 in. for the table, 1 ft. 9 in. on either side for chairs, and 2 ft. 6 in. passage room round, clear of furniture, as has been done in the plan on p. 35.

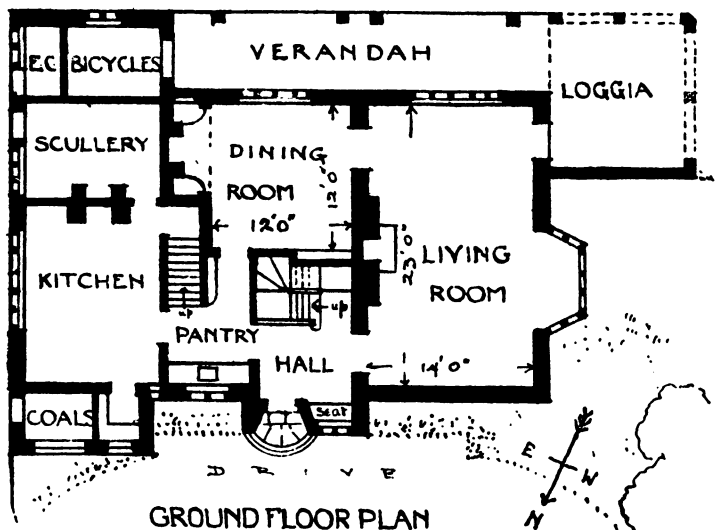
The fireplace of a small dining room may legitimately be recessed, an ingle nook in this case being of practical utility; and the sideboard likewise will never crowd the room if we can stand it in a 9 in. or even 6 in. recess. These points are also shown in the plan just referred to.

The dining room should be in close touch with the pantry and kitchen, but small ones are often spoilt by putting a second door for serving purposes. The distances will never be very serious, and it saves the comfort of the room for sitting in to have neither serving door nor serving hatch.

The doorway must necessarily be as near the corner as possible to open clear of persons sitting at the table, but no sitting room door should be nearer than 9 in. to a corner, or it is awkward to get round; and, of course, all doors must be open so as to screen the



FIRST FLOOR PLAN



GROUND FLOOR PLAN

PLANS OF A HOUSE ORIGINALLY DESIGNED AS A HOLIDAY COTTAGE BY THE SEA (see Sketch, p. 37).

table, and with it the larger half of the room, including the fireplace.

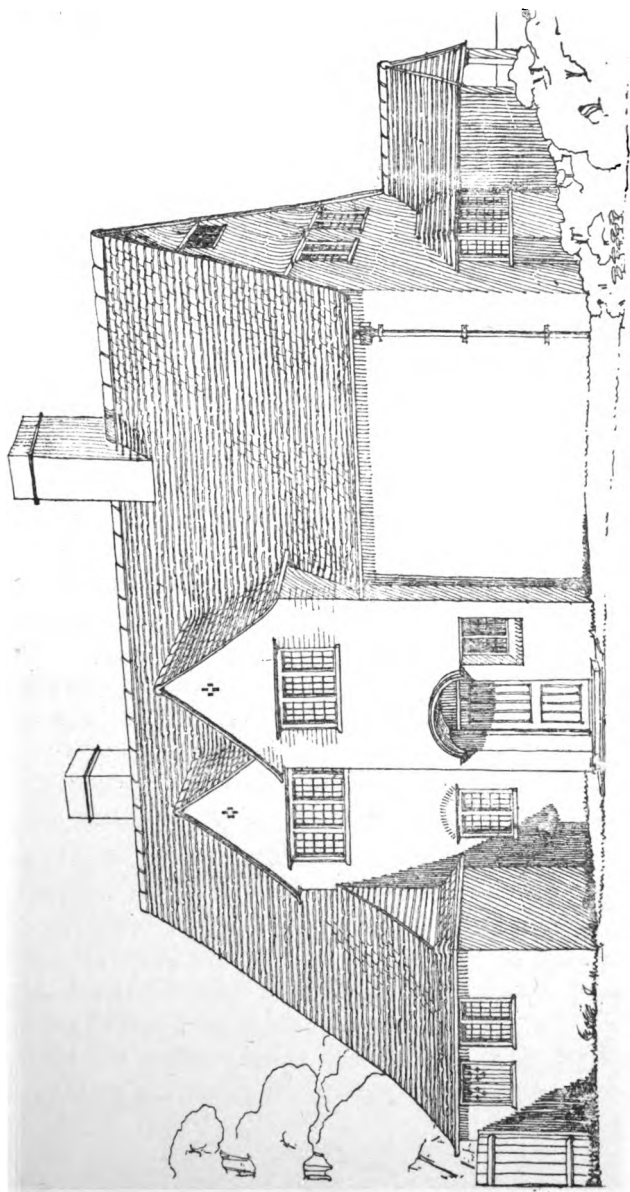
BEDROOMS.—The value of outside chimney stacks will be at once apparent in the bedrooms. In a small room the plan resolves itself into a question of a suitable place for a bed, and one of the most compact arrangements is to have the bed behind the door, with the windows opposite and the fireplace in a corner against the outside wall. This allows wall space for a chest of drawers, wash stand, and a chair or two, and yet a cosy fireplace, away from the door and the bed.

In larger rooms, where there is space for a double bed, while allowing space on both sides of the bed, we must provide a working area. So often a double bed fills a small room, but if instead of a square room we have a long and rather narrow one with the bed at one end, we shall get over this difficulty. In such rooms it is desirable that the main light should not face the bed, but be to one side, thereby enabling an invalid to read in bed.

LANDINGS.—Plenty of ventilation and light should be provided in the passages as well as in the rooms upstairs; dark unventilated landings are traps for dirt and always unwholesome.

BATHROOM.—The bath must be within easy reach of the hot water pipes from the kitchen, thereby ensuring a simple and sufficient hot water supply. In most cases a lavatory basin is a useful addition, and we can always by an extra turn in the hot pipes make an efficient towel rail.

LINEN.—Near the bathroom will be the linen closet,



SKETCH FOR SEA-SIDE COTTAGE (see Plans, p. 35).

borrowing the heat of the hot water cylinder. If this is only in the form of a large cupboard it should be placed near a passage window, so that sorting and distributing may be done in a good light, and on a movable flap-table provided for the purpose.

ATTICS.—Should the roof be designed to contain attics, they will likely enough provide some of the most attractive rooms in the house. But if used as bedrooms the floor space should not be curtailed unnecessarily, because of the sloping ceilings; quite a good place for a bed is against a wall into which the slope of the ceiling cuts four feet above the floor; it gives ample room to stand up outside the bed, and there would be no danger of bumping ones head getting in or out. Floor space for furniture and chairs placed against the walls is of great value, even if the ceiling is quite low.

Finally let it be said, that our furniture should be allowed to influence to some extent the details of our house. Large pieces must be specially provided for; but more than that is permissible, for family heirlooms, whether of fine design or not, touch on the very personality of the household; and they should be allowed within reason to affect the spirit of the design. Provision for the furniture is always a condition in the design of every house; and, where that furniture already exists, the art lies in making the house show it off to the best advantage and not, as we so often see, in making it look ridiculously out of place, through some narrow-minded adherence to a particular style.

CHAPTER IV.

EXTERIOR EFFECT AND MATERIALS.

REPOSE IN NATURE.—How difficult it is to analyse the feeling of delight and enthusiasm when exploring a beautiful neighbourhood for the first time! And this is partly because English scenery is never theatrical in its effect, and rarely even grand, compared to that of other countries. The essential features are the much more subtle ones of peace and repose. Think of our still rivers, silently gliding among the ploughlands and green fields, with farms and sleepy villages nestling along their banks. Think of the languid harmony of a woodland atmosphere, with the sun flickering through the trees on to a carpet of bracken below. And yet, how soothing in quite a different way is the open freshness of a heathery moorland, with its curlews' plaintive cry, and the distant tinkling of sheep bells.

Difficult as it is to analyse these effects of nature, how much more difficult is it to fathom the almost human spirit of a beautiful old house, itself most gorgeously bedecked by nature, but reflecting also in every stone the life of those who built and cared for it—the cherished home of men and women like ourselves?

But our feelings outrun our reason; for we all

know well enough when a sharp turn in our road reveals a house, how sometimes it gives the impression of impudent intrusion, yet sometimes, rarely it may be, but still occasionally, it completes our unfinished picture of the neighbourhood, and appears to us at once an additional harmony, truly a fit home for those whose beautiful country we are exploring. This feeling need not be, and is not, confined to old cottages or stately manor houses, for many will be able to recall comparatively new houses, designed and built with this absolute success in their external effect. Such buildings seem to reflect that repose which English scenery never lacks.

Let us make this repose our ideal ; with which no detail of construction or ornament must be allowed to tamper. But how are we to attain such artistic perfection ?

REPOSE IN BUILDINGS.—For a moment let us examine some such successful house as that described, whether old or new. We shall find that the “architectural” features have surprisingly little to do with the general result. The mullioned windows, the stone mouldings and the design of the chimney stacks are secondary matters, and only complete the wonderful effect produced by the comparatively abstract qualities of repose and mass, and—most important of all—the materials employed, and the method of employing them.

While in an individual case we must never lose sight of the materials when considering the design, yet for the purposes of analysis we will postpone their consideration till we discuss the particular features in which they are employed.

Are there any laws or principles affecting the repose, the mass, and the general grouping of the design apart from the materials? Yes, there is one, a very broad one, but we must never lose sight of it.

Repose can only be obtained if the grouping and arrangement of the building takes into account the peculiarities of the site, emphasising the good qualities, and disguising, as far as may be, the bad ones.

QUALITIES OF THE SITE.—Every site has its exigencies and its possibilities, and both must be fully realised before we begin to build. It is futile attempting to reproduce a perfect bit of proportion, line for line, on a site it was not designed for; the original designer would laugh at the idea. Nature is so strong we cannot dictate to her in our building; if we could change the whole appearance of our site by raising artificial hills and planting exotic trees, nature would deride and common-sense condemn us. We depend on nature's assistance, and we must bring out such qualities as she offers. It is useless to waste money or regrets, because the soil is sandy or the site flat; a flat garden may be as interesting as a terraced one, and heather and gorse are no less beautiful than bluebells and primroses. We must make the best use of what nature provides, before introducing strange materials in our buildings, or new flowers in the garden.

We so often fail to realise what nature is giving us. If there is only one good tree on the site, we must make the most of it; if there is a gentle fall in the ground, emphasise it; but if the site is a narrow slip

exactly like its twenty neighbours, then we may legitimately introduce variation and interest in the building, in contrast to the monotony of the rest; or if the others are remarkable for their fussy elaboration, then ours may be studiously simple.

Take, for instance, a falling site. A long roof sloping with the ground would disguise its chief quality, and, unless well buttressed up on the lower sides of the roof itself would look weak; but if we let a bold gable or solid chimney stack jut out into the valley, the vertical face of the wall and horizontal lines of the ridge and eaves will stand out in sharp contrast to the unevenness of the site, emphasising both the falling ground and the stability of the house, in a way that long sloping roofs could not possibly do by themselves. But these are matters in which the architect will prove himself a true artist; these are his best materials and finest opportunities.

For a moment let us consider one or two well-known masterpieces of architecture, and see how the sites were chosen, or how dealt with when already settled.

Our own Houses of Parliament owe their beauty, not only to the wonderful grouping and classical balance of the river front, but also to the strong vertical lines, especially of the two towers, rising boldly up in contrast to the low-lying effect from which the building would otherwise suffer from every point of view. Think how the rugged heights of the Acropolis emphasise the calm horizontal lines of the Parthenon. Think of the aspiring vertical lines of Amiens Cathedral, emphasising its own grandeur as it stands towering high among the low houses round.

Then, in another way, emphasis is sometimes given to a natural feature by simply enlarging it—into a chapel, as at Mont St. Michel, or into a castle, as at Windsor. Always the *site* is the dominant factor in the design, and so it must be with us in our humble domestic architecture.

CHOICE OF MATERIALS.—The choice of materials should be much easier than some seem to find it, for a very good reason must be forthcoming if we discard local methods and local materials. In a tile neighbourhood, like Surrey and Sussex, we may well refuse to use slates, even if green and rough; and in a slate neighbourhood, like the Lakes, do not worry nature by roofing your house with red tiles.

In a land of grey stone and silver slates, like Dartmoor, it is sheer vulgarity to build anything with pink bricks, bright yellow limestone dressings, and red tiles; and granite walls with slate roofs would, if we can imagine them, be equally out of place in a brick and tile country, though less noticeable.

Pantiles on the east coast, plain tiles in the south, slates all up the west coast, and stone tiles in the Midlands are, roughly speaking, the natural roofing materials; and, as sound roofs can be made in any of them, we must stick to local traditions, in spite of the low cost of freightage, if our house is to belong to the neighbourhood we have selected; mere predilection for a certain material is not sufficient excuse for employing it.

The exterior of our house, then, must emphasise the good qualities of the site and disguise the bad ones; the materials and their use must conform to

the best local tradition ; and yet the exterior must be a simple and direct result of the plan. It is as useless to consider the elevations apart from the plan as it is to settle on the plan, and then tell the architect to make elevations to suit it. Of course it *can* be done after a manner, but we thereby invite complete failure in both.

PITFALLS IN DESIGN.—It would be impossible to formulate here any useful suggestions as to the method of arranging the elevations, for thereby we should encroach on the mysteries of what is artistic and what is not. No number of rules can possibly make an art ; but judging from examples all over the country, it may be well to provide against certain common pitfalls by recognising them as such.

Perhaps the commonest error in the houses we see erected in these days is fussiness ; too many features, and too many different sorts of materials, are the usual forms this takes. It is easy to recall houses with walls partly of stone, partly of brick, with just a bit of roughcast here, or a tile-hung gable there, and a half-timber porch round the corner. We lose every bit of repose by this kaleidoscopic effect, and gain nothing in interest. Both in the plans and in the elevations, gratuitous little features, which appear so attractive on drawings, become only too often little blots in the buildings. Elevations must not be spoilt by “quaint bits,” but be governed primarily by the general effect and grouping of the design and its principal features. Again, the features must bear direct relation to one another, for the “quaintness” of irregularity must be the outcome of studied

composition. Irregularity should be the blank verse of architecture, not merely bad rhythm.

A number of gables each of a different size require to be justified; so also do two gables of different materials, but otherwise corresponding. The walls must not only be strong, they must look strong too; and the windows should not, therefore, be allowed to cut them up anyhow, just because more light is wanted inside. If the elevations refuse to look respectable, there must be no hesitation in modifying the plan, for it is a bad plan that makes a bad elevation necessary.

Angle bays are features to be used with the greatest caution, and while certain masters have used them successfully they are hard to justify. They destroy the strength of the walls actually, but also in effect outside; a double buttress up the angle was considered necessary in mediæval times, and yet we wonder why our modern villa with all its angle bays is ugly. And inside, compare the result of an ordinary bay in a flat wall with that of an angle bay. Instead of enlarging the room the angle bay, if it adds floor space, invariably draws attention to the limitations of the room as nothing else does. There happens to be a fashion for bay windows as there is for "quaintness," the chief bogeys being stiffness and formality; but the universal demand for bay windows will pass away as surely as has the demand for classicism. Some of the prettiest and most comfortable rooms in old houses have no bay windows or irregularities.

If our building is in the depth of the country, it

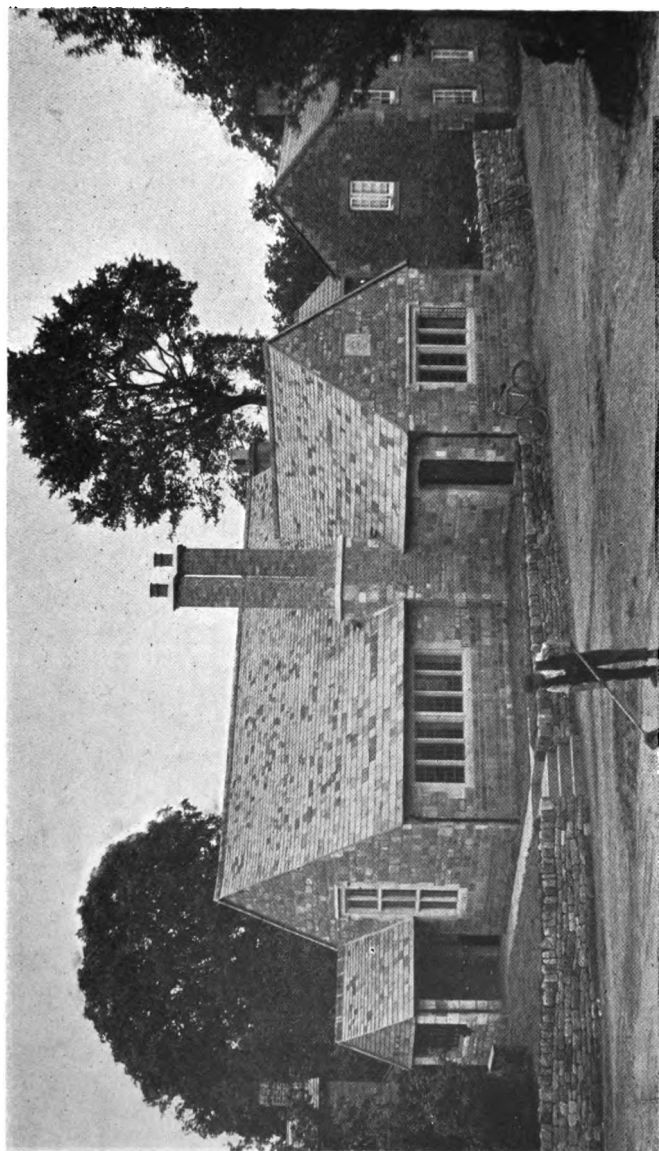
must partake more and more of the cottage type; extraneous ornament, carving, and even mouldings are out of place, unless (as in the case of lodges) we wish to connect the building with some larger or more stately mansion. For instance, such things as classical columns, cornices, and dentil moulds, or anything in the shape of battlements, tracery or turrets, all demand a formality and dignity in the general scheme that is only associated with public buildings or the homes of the more wealthy. It is quite true that beautiful bits of elaborate workmanship adorn some of our old cottages; but times have changed, and such items nowadays spell "money." Generally on a tiny house they spell "ostentation," and that is always waste of money.

A six-inch square post of English oak, finished with the adze, is more in keeping with our ideals and the neighbourhood than a classic column with ever so perfect an "entasis"; and broad eaves, with the underside plastered to catch the reflected light from a sunny path, cast just as good a shadow as the most correctly moulded cornice.

Everything depends on an intelligent use of our materials. They must be put together in a workman-like fashion, so as to bring out the good qualities of each.

But this brings us to the consideration of materials, and we will discuss them directly in connection with the features which they help to form.

Foundations may be safely left to technical hand-books on the subject. All it is desirable to say here is that, while economy should be practised with



THE VILLAGE CLUB AT ASTON-SUB-EDGE, GLOUCESTERSHIRE, DESIGNED BY MR. GUY DAWBER.

Showing the treatment of a building in local stone with a stone tiled roof. The "valley" behind the chimney has been worked round in stone tiles without any lead gutter. The chimney stack is in brick. [*Plate IV. to face p. 46.*]

knowledge, there should be no doubt about the sufficiency of the foundations, for it is expensive work strengthening them later on. Then again, on most sites, it is desirable to have a six-inch layer of cement concrete all over the site, as it not only prevents the possibility of damp under floors but it also excludes, as nothing else will, all rats and mice from neighbouring farmyards.

WALLS. STONE WALLS.—There are a multitude of terms descriptive of stone walling, but as they vary in every locality we shall gain little by entering into them. Having selected a stone, our first care must be to use it naturally; very likely we must have it “dressed” to some extent that it may throw off the water, but each “course,” each layer of stones, must be a natural size. It is always a pity to cut every stone in half before it is laid, as some do to obtain a “texture” to the wall. In some places stone is procurable in thin slabs, when we can safely use it in thin courses; but if, as in Yorkshire, stone is found and quarried in large blocks, then our courses may be twelve or fourteen inches high, so long as the stones are not too large to handle. It saves labour and is cheaper to build so, and how well it looks on the Yorkshire moors with large joints, and a roof above of red pantiles or big slates. Stones which are very hard, making it expensive to “square up” the courses at all, may be treated as “rubble walling,” that is walling in which the stones fit in as best they can, without regular horizontal courses, and with rough faces almost as they came out of the quarry; and whether the stone so used is in thin layers or in awkwardly shaped lumps, it is fascinating

to watch a clever hand select the pieces for "facing" or "bonding" as the work proceeds. It is an art that comes by intimate knowledge and experience of the particular stone, for which local skill is indispensable.

But, having got the stone, and having settled whether it is to be "rubble" or "chopped face," or whatever local tradition and terminology requires, we must next interest ourselves in the joints, not the material used, but the appearance of the joints. The common practice is either to "flush up" a joint in an ugly slovenly fashion, with the idea of giving a smooth surface to a rough wall, or else the exact opposite, whereby a wonderful effect of all stone and no joint is produced, the joints having been rendered invisible. Neither of these is satisfactory.

All the harder and rougher stones look well, and keep the water out best, if the mortar is kept right back, even out of sight. Each stone is then chosen with the top edge sloping outwards, so that no water is held by the joint; and nowhere may better examples of this be seen than in North Wales and the Lake District. Then the more tractable stones, that are easily squared, look best with a thick joint, half an inch thick even, kept back just to throw the mortar into shadow. Even the finest dressed "ashlar" looks better and stronger if wide joints are used, thereby obviating the effect of a thin stone veneer adhering to a strong core behind.

Mortar may be toned down if the colour is too staring, or kept back to throw it into shadow; but it ought to be remembered that the joints must show, and that any attempt at concealing them spoils the

whole effect of masonry. It is almost true to say that the effect of solidity depends on big well-marked joints, because they emphasise the individual reality of the blocks of stone; and it may be added that a fine joint is neither so strong nor so lasting as a big one.

Again, the more clearly the radiating lines of an arch are marked, the stronger the arch looks. An arch of thin stones or tiles, as in Roman work, emphasising as it does the nature of the thrust by the many radiating joints, is the strongest arch, in effect, that the world has ever produced.

BRICK WALLS.—Walls of brick are generally treated better for some reason in this matter of joints than those of stone, but the same rules apply. Bricks in the south of England measure 9 in. by $4\frac{1}{2}$ in. by 3 in., approximately, but in certain localities and in the north they are slightly larger. Generally speaking, the thinner a brick is the better it looks made up, the length and width being comparatively unimportant; and for this reason the special thin bricks (only $2\frac{1}{4}$ in. high), now being made in increasing numbers, will be found more satisfactory than any. It was a common size in the old days, and very many of our most charming old brick buildings will be found to have been built with them. It is, however, more expensive to build with them, for, although they cost about the same as other bricks, many more are required for the same amount of walling, and consequently there is also more labour and mortar wanted.

But, whatever the size of the bricks, they should for our purposes always be hand-made, and have a rough

surface. What we want is a surface without the mechanical precision of a machine-made article about it, and one which will "weather" a nice tone. Anything like a "machine-pressed" or "wire cut" brick should be avoided for the facing of the wall. Plate 6, on p. 62, is a good example of the use of local brick.

Smooth "red rubber" brickwork with fine joints may also be studiously avoided; such accuracy can be permitted in town houses in conjunction with carving or other luxuries, but not on country cottages, and still less in any important structural position such as an arch.

The colour of bricks varies too much to allow of discussion, but generally it may be said that bricks should not be "picked for colour," that is, within limits, a variation in the colour should be allowed, and even required. A charming effect is produced by using "clamp burnt" bricks and selecting for "headers" those that are harder burnt, their bluish colour alternating with the lighter colour of the rest.

A few makes of brick are of a really impossible colour, in which case an excellent effect may be produced, and a very sound job made, by keeping the mortar well back, and then whitening the whole with some weather-proof distemper (see Plate 3, p. 22). This looks better than white rough-cast, for the joints add so much interest; and it may be done even to stonework with success, especially round cottage doorways, so long as the joints allow the separate stones to be clearly seen. Many old cottages in our stone counties give beautiful examples of this.

HALF TIMBER WALLS.—Half timber walls, such as

are seen to perfection in the old houses of Cheshire, have been almost impracticable recently on account of the bye-laws in force in most "rural districts." If used they must be the real thing, and not a thin, or even thick, veneer stuck to a brick wall behind. The oak timbers must be large and well framed together, and obviously carrying the roof or whatever there is over them. The joints, the tenon and mortice, may be indicated by the oak pins left projecting on the face, for it is always more pleasing to have the method of construction in evidence. Such walls may be used almost anywhere with success, especially in overhanging upper floors, or where there is no apparent support for more solid construction. A charming bit of the real article is seen in Plate 5, from a house at Chislehurst (see p. 52). But real half timber work is expensive, and it need hardly be said that the multitude of jerry built houses, affecting this construction, are shams in almost every case. The method most often adopted is a rough-cast surface with streaks of smooth cement painted oak colour; or another trick is to stick thin bits of wood against, or bedded in, the brick wall behind; but they are all shams, unless we class them merely as a silly form of ornament.

CONCRETE WALLS.—The possibilities of "cob" walls are very limited, and we will only refer briefly to their modern development in concrete. Concrete is perhaps the cheapest and strongest of all walling materials; and, if the workmen are used to it, and good gravel, or stone and sand, can be cheaply obtained, concrete walling may be used with certain success. It is cheapest if built between planks solid "in situ," not

made into blocks first, and a nine inch wall is stronger than one of the same thickness in brick. The chief objection is its liability to condense moisture owing to its hardness, but this may be surmounted by "battening" inside, or even by a thick wall paper. Outside it may be most simply treated with cement rough-cast, or tile hanging to render it rain proof.

ROUGH-CAST WALLS.—Rough-cast, whether used on stone, brick, or concrete, is a common and satisfactory method of weather-proofing these walls. As there are no joints, an artificial roughness is produced by flinging a thin mixture of cement and gravel on to a prepared surface. Any attempt at pressing pebbles separately into the plaster should be discountenanced entirely.

It is a common practice to colour rough-cast, either during the process or subsequently, and a plea may not be out of place here for less of the tinting pigment in exterior distemper than is usually applied. A slight umber tint is often charming; so also are the pinks one associates with cob walls for some reason; but compare such tinted surfaces with a plain milk white. There is such a refined look about white, and a shadow cast on it at midday turns the white into a pure blue or purple, whereas a shadow on a coloured surface will always be muddy in comparison. How much better white shows up such flowers as the tall alkanet, larkspur or hollyhocks; while a tinted wall looks shabby against them, or else it detracts from their brightness. And, again, when the wall is old, and lichens and mosses appear on it, the white wall becomes itself a study in green and yellow, while its



A COTTAGE AT CHISLEHURST, DESIGNED BY MR. E. J. MAY.

An example of solid oak "half timber" framing, the lower part of the porch being filled in with narrow bricks set herring-bone fashion. The lead "comes" in the windows are $\frac{3}{4}$ inch wide. Notice also a delightful oak gate in the foreground.

[Plate V. to face p. 52.]

tinted and stained neighbour cries out for a new coat of distemper. No natural tint of stone or brick is so insistent as a flat wash of artificial colour. The strength, weight, and the surface interest of these building materials are their chief qualities, while distemper has no quality except that of tint.

CHAPTER V.

EXTERIOR EFFECT AND MATERIALS.—*Continued.*

ROOFS. PANTILES.—Whilst as we have already said, roofs should be kept simple, there are degrees of simplicity required by the materials used. All pantile roofs, or roofs of any of the more modern forms of these large tiles, should be just as plain as we can get them. “Valleys” are distinctly ugly things, neither is a “hip” quite satisfactory. The best form for such a roof is a straight unbroken pitch, finished at either end with a gable and parapet, for pantiles do not lend themselves to an overhanging treatment at the gables. Long sloping roofs reaching out to shield a verandah or outbuildings, exhibit the best characteristics of pantiles. There is no difficulty in bringing chimney stacks through the roof, but such excrescences as dormer windows should have flat tops covered with lead, as the cutting in of a small pitch roof is awkward and unsightly.

SLATES AND STONE TILES.—Slate roofs should also be unbroken as far as possible, especially if the slates are large. In their case, however, a parapet up the gables is unnecessary, as a barge board or slate “verge” treatment is equally workable (see Plate 1, frontispiece). But slates and stone tiles lend themselves to another treatment of the valley gutter, that of

rounding it into a gentle curve so that the slates or stone tiles are continuous, and all lead work is dispensed with (see Plate 4, p. 46). Many old stone and slate roofs, and new ones too, may be seen treated in this way, and they are most satisfactory if done well. The absence of lines marking with mechanical precision the various planes, makes the roof seem all one continuous piece of work, with a charming softness and grace. This method involves a slight raising of the lower ridge as it gradually dies into the roof above, a delightful relief from the usual stiffness.

Again, in stone and slate roofs a pleasing method of dealing with the hips is simply to mitre carefully the stones or slates, making as close a joint as possible when no covering or even leadwork underneath will be found necessary. But to make this possible the stones or slates so mitred should be twice as wide as the others, or there will be no means of fixing them. Slate hips may be successfully treated in lead; but it must be bold, not a narrow strip that looks half ashamed of its existence. Stone tiled and slate roofs should both be in graduated courses (as shown in Plate 4, p. 46), the big ones at the bottom gradually diminishing in size up to the ridge. Then in the case of slates, there is an unnecessary trade instinct to cut and sort them according to width as well as length, whereas "random" slating of varying widths gives perfectly natural and less mechanical result.

Ridges of stone roofs should be preferably in stone; but in slate roofs they may be stone, tiles, or lead with equal success, so long as they are kept simple, for the ridge is never the place for ornament.

PLAIN TILES.—Plain tiles, as seen to perfection in Surrey and Sussex, have to be selected for their appearance with as great care as bricks; for no glazed or machine-pressed tiles must be used, if the roof is to take a nice sombre tone as the seasons pass over it. Good hand-made tiles have the best surface, and also have more strongly marked than those that are machine made, the beautiful curve from top to bottom which adds so much to their rain-resisting power. And if they can also be got with a slight curve from side to side, we shall ensure not only a roof that is weather-proof, but also one that is full of interest, and upon which it will always be a pleasure to look out (see Plate 2, p. 12, showing a roof of old tiles). The best substitute for a hand-made tile is one with an artificial sand face; but all those tiles may safely be discarded that are flat, smooth-faced, and machine-made, whose chief quality, as the builder will tell you with pride, is their accuracy of make.

The ridge for a plain tile roof should be a soft line, and is best finished with plain rounded ridge tiles, without any roll or ornament; and these may also be carried down the hips with good effect (see Plate 2, p. 12). Excellent special hip tiles, however, are made to course with plain tiles, and should be chosen, as also should valley tiles, with as flat a curve as possible. They are made occasionally with angles instead of curves, but they lose thereby much of their charm.

The valleys are sometimes rounded as has been described in slate and stone roofs, but plain tiles do not lend themselves to the treatment, and few things look better than a well-rounded valley tile.

THATCH.—Thatched roofs are likely to go the same way as cob walls, for though their picturesqueness, their warmth in winter and coolness in summer, are three important qualities, yet there are other considerations, even more powerful, tending towards their abandonment. The chief of these is their liability to decay, necessitating a new coat of thatch as often as every 20 years if made of straw, though less often if made of reeds. Then they are also certain to collect insects after a few years, which are unpleasant, even if prevented from coming through. And finally there is the danger of fire, which is such as to make most insurance companies double their rates of premium for thatched buildings. But with all this, it is probable that houses and cottages will occasionally be roofed with it for many years to come, if thatchers can be found to do the work. It is an art in which it is useless to dictate too closely; the thatcher himself will best know his materials, and how often and where to put the “spiks” and “ledgers.” At the eaves there must be a large projection, so that the drippings in windy weather are not blown against the house; for, instead of eaves guttering, the ground should be paved all round the house where the drops will fall.

EAVES.—All roofs of whatever materials, except thatch, should have a distinct and visible tilt at the eaves, to give the effect of throwing the water well out from the wall below, to check the flow of water in a storm, and to give relief from the mechanical stiffness produced by sawn rafters when new. Similar relief may be obtained by slightly packing up the last

ridge tiles and all the end tiles up the gable so as to throw the wet back from the edge; but this must not be too conspicuous, or it will savour of artificial quaintness.

The eaves, in nearly every house, form the principal horizontal line, and cast the principal shadows; and, consequently, they must receive very careful treatment. On such a house as we are considering, if the main eaves project 14 in. from the face of the wall below, it will generally be found enough; while eaves of smaller features will, of course, demand less. As the eaves are generally seen from below, the treatment of the "soffit" or underside becomes important. With stone tiles or large slates a slightly projecting corbel course, acting as a tilt to the bottom course of stone tiles, is a satisfactory solution, even if we do not quite get the 14 in. projection. When the rafters are brought beyond the wall, there are roughly speaking two methods of finishing the eaves (1) cutting the ends of the rafters neatly and allowing them to show from below, or (2) boarding or plastering the feet of the rafters so that they do not show.

There are occasions for both methods; and we shall find that a plastered underside gives most play with reflected light, while visible rafters, especially if not too mechanically regular, give most interest in actual construction.

GUTTERS.—Eaves gutters are a necessity in most positions; but, if occasion offers, they should be omitted, as, for instance, round dormer windows where the small amount of dripping will be received by the roof below. Gutters are fixed either to the

rafters or "facia" (which is a board nailed along the toes of the rafters), or else they are supported independently on wrought iron brackets from the wall below. The latter gives an opportunity for adding interest to the eaves by good bits of simple and strong wrought ironwork. Square iron gutters look quite as well as the ordinary round pattern, and square stack pipes with large square "ears" are much more forcible and interesting than the ordinary circular type. Gutters and down pipes must show, so do not let us be afraid of them. Oak V gutters and wooden down pipes are very attractive, and they might be used more often than they are, except for their liability to decay and get out of order.

DOORS.—Outside doorways, and especially front doors, can be given an air of hospitality by making them wide and low. About 6 ft. 6 in. is a convenient height for our purpose, though much lower than usual; and the width should be from 3 ft. to 3 ft. 6 in. for a single door, but about 4 ft. 6 in. for folding doors; and it will be found that two "folding" doors, each 2 ft. 4 in. wide, take up less room when open, and so are easier to deal with inside than a single wide one. All exterior doors should have a small paved space outside; and when means allow, this may be developed into a paved path leading up to them, giving a delightful cottage effect, and proving on muddy days more valuable than twenty scrapers in keeping the carpets clean.

WINDOWS.—Windows naturally divide themselves under two heads, namely "sash" and "casement"

windows. The latter may be further divided into casements in wood frames, and casements in stone.

SASH WINDOWS.—We will take the sash windows first. It will be at once recognised that sash windows require much greater formality of treatment than casements, because they also require greater uniformity of design individually. No liberties can be taken with sash windows such as making them of unequal heights, for the eye demands that both heads and sills should run through level; and, except under special conditions, which are not likely to occur in a small country house, any departure from this rule will cause that “jumpy” effect, too often seen on ill-considered back elevations. A variety of floor levels is, for this reason, to be avoided, or we shall get into difficulties.

There is no need to keep the ground-floor windows the same height as those on the floors above; and, in fact, a difference will always be likely for two reasons. In sitting-rooms the height of the windows above the floor should be about 2 ft. 6 in. up to where the glass begins, for we must be able to see out comfortably even when sitting in a low easy chair; but in a bedroom, 3 ft. 6 in. from the floor to the glass is not at all unpleasant, giving greater privacy and warmth on frosty nights; and casement window sills may even be higher. The light that enters a room through a window, below about 4 ft., is almost useless for lighting purposes; and the windows, upstairs and down, in order that they may give the maximum of light, must reach as near the ceiling as the cornice and curtains will allow, thereby ensuring also adequate ventilation to the top of the room.

The width of sash windows should not vary throughout the house without good reason. The first floor windows should as a rule be the same width as those on the ground floor, but if narrow sash windows are used, the width of the panes should remain the same, their number only being reduced. Sash windows wider than the standard selected never look well and should be avoided. The panes of glass, throughout the house, should vary in size as little as possible, for this is one of those things that give "scale" to a design; something by which the eye measures the size of the various parts.

This brings us to the consideration of sash bars and small panes, versus large sheets of plate glass. Objections to the exterior effect of small panes are rarely heard, and it has just been stated in their favour that they give scale to the outside. But it is from an interior point of view that they are criticised, so let us face these criticisms.

The two arguments brought against sash bars are that they diminish the light and obstruct the view; and they certainly do both. But the former difficulty can be surmounted by slightly increasing the size of the window, which will give the additional advantage of having more to open in summer. Then is the obstruction of view a real objection?

A fact easily proved by experiment is, that the variety and depth of colour in a distant view is more easily appreciated when seen through a small gap in a hedge, or past some slight obstruction like the boughs of a tree, than when seen without anything near at hand to break it up and to contrast with it.



A HOUSE AT WINCHFELD, DESIGNED BY MR. ERNEST NEWTON.

This is an example of the treatment of a simple brick and tile building with sash windows on the ground floor, and casement windows above. Notice the use of well-burnt headers to form a slight pattern in the brickwork below the further chimney-stack.

[Plate VI. to face p. 62.]

But the lack of contrast is only one cause of failure to appreciate what we are looking at; it is accompanied by another. When a beautiful landscape or conservatory full of flowers is seen through a large sheet of clear glass, the eye immediately rests on some detail, and, while so engrossed, fails to appreciate the beauty of the whole or even the relative value of the detail selected. It is here that the landscape painter with his practised eye excels; and for all of us sash bars will be found to relieve the eye of the distraction of the detail, enhancing the general effect of colour by reducing the view to a series of ever changing pictures. Colour at least is never absent, so let us make the most of it, even if the outlook consists of the backs of other houses.

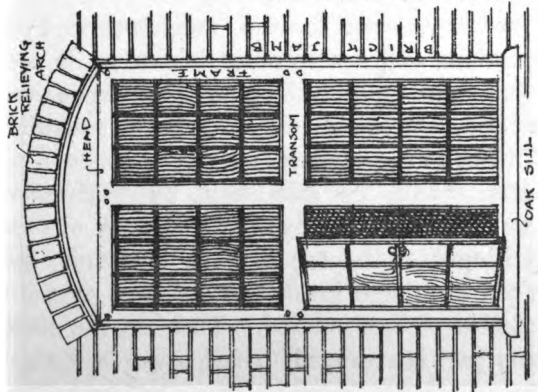
But some will say they prefer to see detail in distant view. Well, they can do so if they try even with sash bars, and their room would not meanwhile lose half the artistic value of a beautiful outlook. If, again, they prefer to feel the open freedom of large sheets of clear glass, let them remember that the more the room becomes merely a sheltered portion of the garden, the smaller and meaner it will appear. How often, when in summer the windows are wide open, our room looks "pokey," only because the eye compares it with the spaciousness of the garden outside; and every room with plate glass windows suffers for exactly the same reason. Though the garden may be incomplete without the house, yet each room in the house must be a self-contained artistic entity, by day and by night, in summer and winter. What a sense of protection sash bars give one when it is

snowing or raining outside. How can small rooms be picturesque without them? for windows should be their best ornaments, not merely glazed holes in the wall.

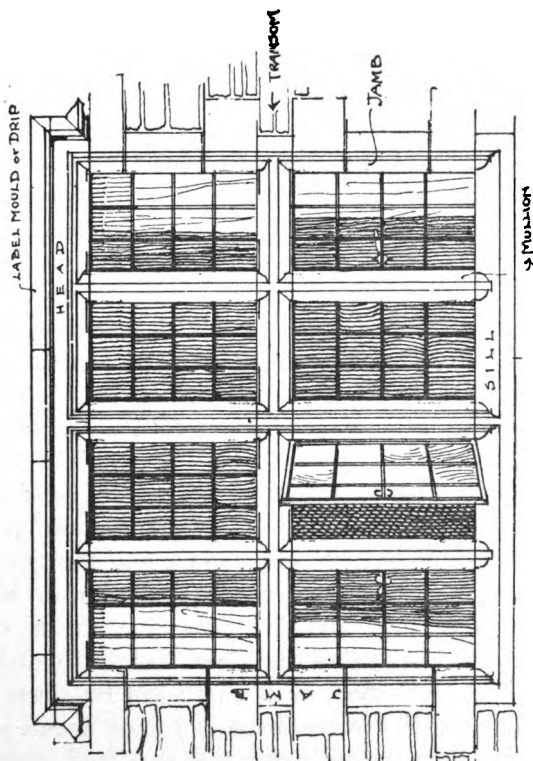
All windows should be set nearly flush with the face of the wall, from 1 in. to 2 in. only being left between the wood frame and the outside edge of the brick opening. Windows so placed give the maximum depth for a window board inside, or perhaps a seat, and the extra depth of the window jambs is also a pleasing feature. This arrangement, by allowing the oak sill to project outside, dispenses with the necessity for a stone or brick sill, an expensive, and often unsightly, feature in houses where the windows are recessed to the thickness of a brick or more.

CASEMENT WINDOWS.—Casement windows are easier to deal with, as they require less formality in their arrangement; but otherwise most of these remarks on sash windows will apply. The frame should be heavy, showing its full strength outside, and the mullions look best if kept as big as the rest of the frame. The effect to be aimed at is a long, low, horizontal one, exactly the opposite of a sash window, which must be tall to be well proportioned. This may get us into difficulties regarding the height of the glass from the floor level, if the window is kept high enough to light and ventilate the room properly, and we shall probably have to accept some compromise on the point.

The horizontal lines of casement windows should be emphasised; and an effective way of doing this is to put a projecting course of tiles immediately along the top of the frame which gives an attractive eyebrow



**WOOD FRAMED WINDOW
WITH IRON CASEMENT, SET IN BRICK WALL**



FOUR LIGHT STONE MULLIONED WINDOW WITH TRANSOM

appearance, and if covered with lead it is a real protection to the window in wet weather.

If it is absolutely necessary to have a tall casement window, the defect in the proportion can generally be remedied by inserting a transom, a little more than half-way up, so dividing the window into two long low ones on top of one another. The very origin of the transom, beyond the stiffening added thereby to the frames, is this idea of proportion; and the modern method of making the transom form a series of square panes, tracery fashion, at the top of the windows is quite meaningless.

This applies also to stone windows, where the object of the transom is to shorten and stiffen the mullions, always the weak part in stone windows. Transoms, however, should not be so low as to make it necessary to stoop to see out, and the glass line under the transom should therefore be at least 5 ft. 10 in. above the floor. A great effect of strength will be given to these windows if the transoms are kept about one inch thicker than the mullions.

Stone, however, even in the neighbourhood of suitable quarries, requires so much labour in its preparation that stone mullioned windows are expensive; and when used, iron casements are almost essential, and add further to the expense.

Casements should be side-hung, by preference, above as well as below the transom; those above are commonly hinged at the top to push outwards, but this looks bad from both inside and out, and gives the least ventilation of any method. Then on the other hand, if any part is arranged to fall inwards, we get

EXTERIOR EFFECT AND MATERIALS.

good ventilation but serious difficulty with blinds; The ordinary "side-hung" casement looks well, and gives the best ventilation; and, if there is a slight difficulty in reaching it, a stool will probably solve the problem and the extra trouble involved saves all ropes and mechanism.

Whether in wood or stone, it is not necessary to disguise the position of opening casements, for the reduction in size of the lights where they occur adds interest. The only precaution necessary is, that the horizontal lines of the leaded glazing should be kept level with the lines of the rest of the window. Leaded glazing, which generally occurs only where iron casements are used, may be employed in wooden casements equally well if economy has to be studied. And, while very small square or diamond panes are troublesome to look through, larger panes five or six inches wide and seven or eight inches high, framed in lead $\frac{5}{8}$ in. wide, are delightful in every way. Most of the argument brought forward in favour of sash bars is applicable to them, if the dividing strips of lead (the "comes" as they are called) are wide and heavy; very narrow lead is merely an annoyance and quite insufficient for artistic purposes.

GLASS.—Common sheet glass is generally imperfect, and always uninteresting. Plate glass, on the other hand, is too perfect to have any life or interest from outside. But there is a delightful alternative in crown glass; a very clear transparent glass, as seen from inside, while the slight curve it acquires in its manufacture gives it interest and sparkle outside, whether in sash windows or leaded lights.

CHIMNEYS.—Lastly, we have to consider the chimneys. While they make little impression when we first see a house, on getting to know the place better they will be found one of the crucial points in the design; the whole house seems to be summed up in their design (see Plates 2, 6, and 8). Since they will be the most solid part of our structure, to whatever extent they appear outside, this solidity must be emphasised. A chimney stack, whether rising out of the roof or projecting from the face of the wall, must be bold and heavy; at least nine inches of brick should be provided round the flues; and the outside stacks should, if possible, have a projection of fourteen inches from the face of the wall. Expense should be the only limit to the apparent weight of the stacks; no undue oversailing nor ornament must interfere with the squareness of the top, while chimney pots, if used, must be quite plain and unobtrusive. And the time we shall best appreciate our success in this respect, will be after a long day away from home, when we catch sight of our chimneys and roofs silhouetted against an evening sky.

CHAPTER VI.

THE INTERIOR EFFECT.

IF the exterior arrangements and elevations of a house are not subject to rule, still less is the interior effect. General opinion on the subject may nevertheless be described as chaotic, for, since rules are seen to be out of the question, common sense is also disregarded.

The difficulty in the minds of most householders lies chiefly in a total ignorance of what to aim at in designing a small room, often coupled with a strongly rooted idea that an artistic result is a little unnatural, and implies even a degree of discomfort.

We must remember in this connection that the artistic side of our nature must be kept subordinate, or perhaps supplementary, to the practical requirements of the home. Just as the exterior effect must be governed primarily by the nature of the site, so must the interior effect be controlled by the characteristics and every day life of those who live there.

The decoration of a private house, therefore, presents a fundamentally different problem to the decoration of the cosiest of hotels or any beautifully furnished public room. A saloon in an hotel may legitimately be what is called striking, either on account of its architectural

features or its furnishing ; but our home, where all visitors are personal friends, should possess no decoration that " looks at you " as you enter.

Our aim in the interior decoration and design should be a practical homeliness, and art must follow and refine this homeliness, for it cannot create it. No number of perfect works of art will guarantee a homely result, which is the essence of success in every small house. Good taste should not only imply the possession of a connoisseur's knowledge on works of art, nor merely up-to-dateness in artistic fashion ; it should also imply an appreciation of the relation of these works of art to their surroundings.

The first impression on entering a room should be the unaffected usefulness and comfort of the place. The next should be the care and general refinement bestowed on each detail, from the arrangement of the structural essentials to the selection of the flowers on the table. Lastly, we may perceive that certain pieces of furniture or ornament are individual and beautiful works of art, and give the keynote to the room.

This does not imply that there need be any limit set to the beauty of pictures or furniture even in a cottage, but there must be a limit to their assertiveness as works of art. When design, in any form, thrusts itself upon our notice, whether it is itself beautiful or the reverse, it must be out of place in that room. The room must be regarded as a whole, and no individual feature must be allowed to encroach on the artistic value of its surroundings by constantly attracting attention to itself.

Homeliness should be the basis of all our ideas on

the interior decoration, and this implies that every item must be natural to those who live there, and of practical use ; and so what is artistic in a palace may be hopelessly out of place in the manor house, and *vice versâ*. Relative value throughout the scheme is of more immediate importance than the intrinsic beauty of individual pieces. Art for art's sake is not a very high ideal, for art is like poetry and music, only a means to an end, and the end is the ennobling of every day life. Let us forget to think ourselves artistic, therefore, and only endeavour to attain a natural refinement in all we do.

The proportion of each room will always be found an important factor in the interior effect, and, though many will speak of a room being well proportioned, it is remarkable how imperfectly they realise the value of this quality. No irregularities, recesses, or bay windows should be allowed to disfigure or hide this sense of proportion, for nothing can make up for its loss.

Excessive height in a room makes cosiness well-nigh impossible, and cosiness is very nearly akin to homeliness. One difficulty here is that a small room next to a larger suffers by having the ceiling at the same height as the latter, and it is generally worth while to correct this by putting a ceiling at a lower level in the smaller room. This inexpensive addition not only increases the apparent size of the smaller room, but adds also a little of that undefined sense of mystery which is sure to exist in an old house after being altered and added to by successive generations.

In our small house, where the rooms are only 13 ft.

or 14 ft. wide, a height of 8 ft. 6 in. will generally be found ample, and in a small study, perhaps only 10 ft. by 12 ft., a height of 8 ft. is all that is desirable for the look or necessary for health. In spite of all that ventilating experts may say, a low room with good windows and an efficient fireplace is an extremely easy place to keep fresh. Schemes of compulsory ventilation by mechanical methods may be left for those unwholesome people who unwittingly cause draughts by endeavouring to seal hermetically the rooms in which they live.

Proportion next depends on the relation of the width of the room to its length, but measurement alone will not tell us what the effect produced will be. The position of the fireplace, especially if in a projecting chimney breast, and the arrangement of the windows will both have to be considered. For instance, the fireplace in a sitting-room will almost always have the effect of contracting the space between itself and the opposite wall, chiefly, it is true, on account of the arrangement of the furniture. Then again, in an oblong room windows at the end tend to shorten it in appearance, but along one side they do the opposite, and increase the effect of length. This is, of course, only a general rule which is affected by many minor considerations, but it is always a tendency which often results in the employment of a bay window to counteract it.

Bay windows are convenient architectural devices for gaining extra space beyond the main walls of the house, being in themselves interesting features in the rooms. They not infrequently in small houses form

the only comfortable corner for an easy chair or writing table, but it is better that the rooms should not depend on bays for interest or comfort; rather they should be an extra and gratuitous feature in each case and be kept subordinate to the main proportions of the room.

Bay windows again, while they are delightful features when carefully used, and a simple means of removing stiffness from both inside and out, soon lose their value and charm if employed too frequently; and they must not be allowed to appear as after-thoughts, or they will seriously detract from the strength and character of the design. Bay windows are powerless, in spite of frequent attempts, to give a commonplace house any claim to artistic merit, although on first sight, it is true, nothing carries through a poor design so effectually as their frequent use.

Whatever size or shape they may be, it is generally a good thing to cut the opening through the main wall at right angles, whether the rest of the bay is square or not. This explains the construction at once, even if there is no beam evident overhead.

Cross light must not be introduced just anyhow, for many rooms are spoilt by badly-placed or ill-balanced windows. Most really pretty rooms will be found to have one main direction for the light, all cross light being kept subordinate. Similar windows, for instance, in the middle of two adjacent walls are almost certain to spoil any room. Secondary windows should, as a rule, be distinctly smaller than those from which we get the main light, and always be placed to light some

dark corner or to give a glimpse of some particular view.

In an oblong room the light should, if possible, come from one of the long sides, and not from the end, making thereby the most of the good quality of length. Such a room, even if it has no more floor area, looks larger than a square room, besides being much more easily furnished, supposing the house to be all on a small scale.

WALLS.—The walls of our sitting-rooms will in most cases be merely plastered, with a skirting against the floor, and possibly a plaster cornice against the ceiling. A plain skirting six or seven inches high, and projecting only a quarter of an inch in front of the plaster, looks very well in a small room which has no special architectural pretensions, and it is much more in keeping with the house than the large heavily-moulded ones in vogue a few years ago.

A picture rail may often take the place of a cornice, at any rate in bedrooms, for it is always useful, and saves much damage being done to the plaster by nails. In this case it should be fixed seven or eight inches down from the ceiling, so as to form a neat finish to the wall paper below, and having the space above it just whitened along with the ceiling. This obviates the ugly line formed by the top edge of a wall paper against the ceiling, when there is no cornice. In no case should a pattern paper, or even coloured distemper, appear both above and below the picture rail; for unless the tint or nature of the covering be changed, the effect is that of an after-thought, as if the rail had been put on top of the wall paper.

Nothing helps to clothe a room, and nothing shows off china or pictures better than wood panelling round the walls. Few luxuries repay those, who can afford it in the first instance, so well; for not only does it keep a room warm to a surprising degree, but it also saves constant redecoration; and it is for the latter reason that it requires such careful handling.

Much modern panelling is heartless, and the simple forms, such as would be suitable for our use, have lost favour with many because they have never seen this practical form of decoration, except when hopelessly misused. Two common forms of abuse may be mentioned; first, the coarseness produced by too heavy framing, and secondly, the mechanical effect produced by too much moulding. The framing must, of course, be in proportion to the size of the panels, but the first object of the panels is to save material. Do let us, then, keep the framing small, for there is no strain on it as there is, for instance, in a door. A door that is hung on hinges, and fitted with lock and bolt against intruders, is not a good type on which to frame thin wainscoting against brick walls.

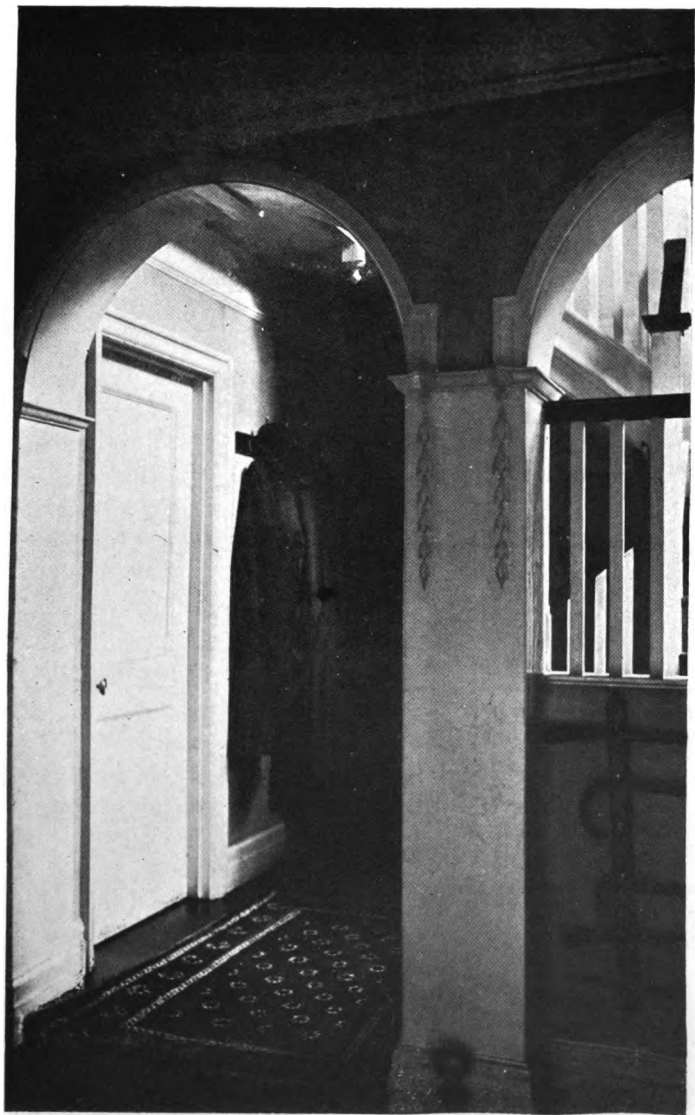
Then, again, the mouldings should not be allowed to hide the rail and panel construction, for so long as this appears even machine-made stuff looks well. In the best old work the mouldings are so selected and arranged as to attract attention to the mode of framing, whereas now the mouldings are often heavy enough to carry the panels by themselves, quite obliterating the real construction behind. If it is desired to have quite small panels, it is always a question whether mitred mouldings are a gain; for, with plain panels

very slightly recessed from the front of the framing, we get a most refined effect. Another alternative is to mould the upright pieces of framing only, allowing the moulding to butt against the horizontal rails, which are continuous, and may be left with square edges.

However we treat our walls, the manner must be broad, for we shall have no excessive height with which to cope, and proportion will already exist. They must be regarded as a background for the furniture and pictures, however good or however poor our pictures may be, and however shabby our furniture. Many tinted and flowery wall papers will kill the pictures and render many smaller ornaments invisible; and, unless we forego all colour and pattern in our hangings and carpets, they make the whole room "chatter." A self-toned paper is quieter, but nothing really equals a cool-toned plain paper, for it gives full value alike to the flowers on the table, and the coloured hangings round the walls.

A smart wall paper is powerless to smarten anything except an empty room; it only makes every bit of furniture look more dowdy than before. But whiten the ceiling, and put on a plain grey "lining" paper, and everything will look its best and, perhaps, better than ever before.

CEILINGS.—The ceiling should be the last part of the room to attract notice, and for this reason nothing is so satisfactory as a plain white one. If enrichment of any sort is used, it should be really good, and, for a small house quite simple, or it will become obtrusive. Nothing worries the imagination more than



THE INTERIOR OF A HOUSE NEAR WELLINGTON COLLEGE.
 Showing a small entrance lobby with an arched opening to the staircase. The arches
 are in cement and painted white, the "drop" ornament being in fibrous plaster.

[Plate VII. to face p. 76.]

ready-made stamped ornament in imitation of plaster modelling. Such things are not justified by our inability to distinguish the false from the real. They are the immoralities of architecture which, once suspected, destroy our faith and affection for the building for ever ; and sooner or later they are bound to declare themselves.

For us a legitimate relief from a plain ceiling lies in the use of beams, either singly or in series, their strength appearing as essential to the structure of the house. No structural timber must look either mean or insufficient, for, when a beam appears, the eye makes no allowance for any unseen assistance it may receive ; rather, it takes for granted that all above rests a dead weight, and that it has no support but what is visible.

For this reason it is desirable to show as much of the strength of a beam as possible, if it is to appear at all ; and, since the width of a timber is, in effect from below, the standard of strength, rather than the depth, narrow floor joists of the ordinary proportions are unsuitable for use as beams to appear in a ceiling.

Coves and, in a lobby or passage, plaster vaulted ceilings are both effective treatments ; and they are legitimate even in a small house if used reasonably and very simply, without either ornament or elaborately moulded ribs.

FLOORS.—All floors, except those on the ground level, are in a cheap house of necessity boarded, for any departure from this would entail rather serious expense. The sitting-rooms also must for comfort

have wood floors, either on the ordinary joists or else laid solid on the concrete. The latter, if carefully done, makes them very quiet to walk upon and leaves no space for rats or mice.

These wood floors will look quite nice if the boards are laid in narrow widths to lessen the effect of shrinkage, and if they run lengthways of the room. They may eventually be stained and polished, which will keep them tidy and make frequent washing unnecessary. Varnish should not be allowed, for it cracks off, and is a constant source of trouble.

Oak is, of course, a charming alternative, if we can afford it for the best rooms; and it is best left quite "clean from the plane," which imparts sufficient polish in the first instance, while an occasional rub with a dry cloth will gradually increase it without spoiling the tone of the wood as it begins to colour.

Parquet flooring has its uses in town houses, where it is desired to hide an inferior or begrimed floor below, but it is absolutely out of place in a country cottage. Wood-block flooring is also rather unsympathetic, and suggestive of schools and hob-nail boots, but there is no warmer or harder wearing floor, although rather costly.

But no wood floor gives the artistic eye so much scope as do the various materials used for paving. Such places as the porch and verandah, for instance, may be laid with narrow bricks on edge—laid, if we like, in a "herring-bone" pattern; and these same bricks may well be laid flat in back passages. Large red tiles, nine or twelve inches square, look well almost anywhere, and improve in appearance by a

few years' use and scrubbing. They are much preferable to those small tiles with smooth surface and sharp edges though they may not lie so flat.

Paving bricks and tiles should be laid with a good wide joint (half an inch is not too much). It adds enormously to their charm, showing up each one as a separate item of construction. To lay them tight means the loss of much interest.

Stone flagged floors, while they have never been excelled in appearance, are much colder than either wood or brick paving. If the stone is handy they may be used in a variety of ways, but the flags need never be all of one size or dressed to too fine a surface. Both mean an unnatural waste of time and material.

The stones should be "random" jointed, except in such a place as a passage, where straight joints, running lengthways with the walls, give a delightful sense of perspective and length.

For a courtyard or terrace walk a cheap and attractive pavement may be made with pebbles laid to a pattern, like the fan-shaped paving outside many old cottage doors; and thin flakes of stone, slates, and even broken tiles make a charming and inexpensive variation if the materials are handy.

Plain cement floors are rather cold and slippery, but extremely sanitary and cheap for the larder or coal-cellar; for the scullery and passages brick or tiles are more suitable.

Having briefly discussed what is called the "shell" of the building, we will glance at one of the chief fittings in relation to the interior effect.

FIREPLACES.—The first of these is the fireplace,

representing in the winter the centre of comfort and hospitality, yet in summer still the focus of decoration and pictures in the room.

But what is the motive in the design of these thousands of fireplaces we see in every house we enter? Or at least what should it be?

The fire itself is the answer; and, like a painting, we ought to frame it in such a way that its beauties have their full value. The grate, therefore, had best not be fussy, which implies, first of all, that the materials used must be few. Bits of polished brass or copper give the grate undue prominence, perhaps not so much when we see it along with others in a shop, as when it is set and doing its work in a quietly furnished room. There is less harm in grates all of brass or all of copper, or if we can afford it, all of steel; but, even then, they are more expensive and more difficult to deal with than iron grates. Nothing harmonises so well with a simple room, nothing is easier to clean, and yet nothing makes a better setting for the glow of the cheery fire, than a black grate.

Again, why are people so tied to those common glazed tiles round their grates? The accuracy of their setting and the perfection of the glaze alone stamp them as up-to-date and common. Hand-painted tiles of real merit are another matter, for they are worth making the keynote of our scheme of colour, which the others are not.

By the use of iron grates a variety of materials at once becomes possible for their setting. Marble, for instance, has a value it can rarely attain when mixed up with tiles or polished brass, while small red bricks,

stone, and even grey Delabole slate, unpolished, all make a good setting for iron.

The mantel in its simpler form acts merely as a frame to the grate, with a shelf for ornaments above. In the sitting-rooms, however, it should be more than this, for it ought to stand out in the scheme of decoration in order to give due importance to the fireplace below. For instance, an excellent plan is to panel the whole chimney breast right up to the ceiling, when an architrave round the opening, and a mantel-shelf carefully moulded, will give us a satisfactory result at small cost. The importance of the fireplace not only admits, but demands that it should be a large feature; and there is generally merit in taking such bits of design up to the top of the room.

Open fireplaces with basket grates, or, if we are to burn wood, with dogs, have a most hospitable appearance; but they both suggest large chimney corners or ingle nooks. These are only too attractive on an architectural drawing, for it is sometimes hardly realised how largely the comfort of the rest of the room is sacrificed. The fire has to be nearly half as hot again to warm a room from an ingle nook, and even then the fireside circle on a winter's evening is rendered impossible. In the dining-room it may be convenient to have the fender or curb well out of the way, but in a well-designed drawing-room recessed fireplaces are quite unnecessary.

In this, as in other ways, the architectural design is successful only so far as it forms a suitable background and staging to the romance of every day life, enacted by a family in their home.

CHAPTER VII.

KITCHEN QUARTERS.

No one will deny that servants are a necessity in every home, but few seem to realise how entirely they become members of the household; and it is in a small house, where there are two or perhaps three servants, that this membership is especially felt, owing to the personal reliance existing between mistress and maid. For we are not discussing a palace where a factotum intervenes his portly presence between our wishes and their complete fulfilment.

In large homes servants are better housed, with their separate bedrooms and luxurious bathrooms, than many of the poorer gentry in the neighbourhood; yet the back parts of many smaller houses are still so dingy and cheerless that the difficulty of keeping good servants in such places is not to be wondered at.

In designing the kitchen quarters we are designing the servants' living rooms, and this should be weighed against the labour-saving compactness of many modern houses, otherwise so carefully planned. Where the kitchen is arranged solely with a view to lessening labour the comfort of the servant between times is lost sight of, and service comes to be regarded as a transient source of income instead of a whole life's calling. Servants should be regarded as permanent

members of our household and be housed accordingly, for no devotion is more complete than that of an old family retainer, and wages alone are not sufficient remuneration for such faithful service.

In small houses, such as we are discussing, the kitchen probably forms the only living room, and it must be treated as such. Both summer and winter conditions must be taken carefully into account, for while the room must be cosy in winter, it must yet be so planned that the servants can sit out of the reach of a hot range during the summer.

No provision in the planning or furnishing will make up for the deficiencies of an untidy cook; still, a good plan will always help to make the place comfortable. A definite place must be provided for the table on which meals will be laid, and at which sewing can be done in the afternoons, in a good light and out of all draughts.

A northern aspect, although good where there is a servants' hall, is too cheerless for their only sitting-room. East is better, for then the earliest risers get the benefit of the morning sun.

Some thought should also be bestowed on the outlook, for the kitchen in this respect comes next after the drawing-room and dining-room. A small paved yard with a blank wall, and perhaps the dustbin, is not enough; the kitchen should have a view of the kitchen garden or some open space. The servants would probably prefer above all, if it can be arranged, a glimpse of the high road and the passers by.

Do not cramp the servants' quarters as if they never had time to look up from their work; they are

human, and require comfort after their sort like the rest of us.

Occasionally, even a small house may be required to have a servants' hall, which will allow the kitchen to be arranged solely for the cook's convenience; and again, the pantry is sometimes enlarged to form a servants' sitting-room, away from the heat and smell of the range. Both these arrangements have, however, the same objection, that a second fire has to be provided all through the colder part of the year.

A cook's conception of a good kitchen would probably be one that had a good range, a good light, and a large table for working on, coupled always with varying ideals as to cleanliness and tidiness.

The range itself can hardly be discussed here, as it is not desirable to advocate the goods of individual makers. However, when looking through a catalogue we shall do well to select one which has the hot plate divided up into a number of sections, or it will surely crack with a big fire. It is a common failing of cheap ranges also that the hot plate is too small for the saucepans on top, and this is to some extent overcome by letting the range project into the room, which at the same time makes it easier for the cook to see and reach things at the back.

Again, it is unnecessary to insist on good light, for it is obviously essential; but the windows must be so arranged as to light the top of the range, and also, if possible, the ovens. If the light faces the range there should either be two windows or a single wide one, so that the cook may not stand in her own light when attending to the saucepans. The side window

commonly advocated is excellent, except that in a small kitchen it is apt to bring the table under it inconveniently near the range. The best plan of all is, perhaps, a cross light, providing as it does the possibility of cross ventilation to disperse heat and smell.

There should be as few doors as possible in a small kitchen, their tendency being to render the place uncomfortable both for working and sitting in. The one to the scullery may be quite close to the range, for it will be used almost exclusively by the cook, and in a journey taken so often every step saved is appreciable. But the door leading to the pantry and dining-room may well be kept away from the range, though preferably on the same side as the other to obviate draughts and crossing the room.

For the walls no papers are quite satisfactory, for the hard wear they get will spoil even a good sanitary paper. A plain distemper is much more suitable, for it can be renewed at very small cost each year when the ceiling is whitened. Still better is a white, or nearly white, paint, though rather more expensive, for it must be the best enamel finish so as to stand frequent washing.

The floor is best made of ordinary boards, for nothing is less tiring to walk about on, and few things are easier to clean. A red tile floor may look well, and a cement one may be cheap and sanitary, but they are rather hard and cold for those who have to live on them.

The scullery may be considered an adjunct, almost a part, of the kitchen, although so long as the kitchen

is the sitting-room there must be a door to separate the two. If a servants' hall is provided, or if the pantry is used as the living room, kitchen and scullery may be combined, especially where the cook is single-handed; she has thereby plenty of elbow room, yet less walking and fewer corners to keep clean.

The sink is the important feature of the scullery, and must never be cramped. It should have a draining board on both sides, or, if that be impossible, there must at any rate be one on the left, for the left hand picks up, holds, and finally has to put down each plate, while the right hand does the washing. Owing to the large amount of grease in a scullery, the sink should be made of glazed stoneware, and its top edge should not be more than 2 feet 8 inches above the floor or above the battened footboard. A plate rack will be required in such a position that the plates drip on to the draining board, and a few shelves and hooks for saucepans and covers must also be provided.

The dustbin, even in a country house, should be small and movable to hold one day's refuse, and should be carried away to the garden each morning. Built dustholes near the house are inclined to smell, and are disagreeable things to clean at any time.

The pantry in a small house must be in close communication with the kitchen, and yet must be easily accessible from the front part of the house. On the other hand, it is not necessary to place it next to the dining-room, for there should be no door or hatchway between them to destroy the privacy of both.

Since all the most delicate china and glass will be washed in the pantry, the sink should be made of

wood and unlined ; earthenware and lead-lined sinks are a frequent cause of breakage among such brittle articles. The parlourmaid will also require nicely fitted cupboards for glass and china. The usual arrangement for these is good, namely, deep cupboards below with a broad "counter top" above them about 2 feet 10 inches above the floor, and 2 feet from front to back. Then, leaving a height of 15 inches for things on this "counter top," a shallow cupboard, carried right up to the ceiling, makes a convenient storage for the glass and china.

While this counter top provides excellent space for putting down a tray, a small movable table or flap will be necessary at which the maid can sit to clean silver, and as additional space for putting things down ; for, when the maid is single-handed, and a meal has to be served or cleared away, there cannot be too many places for this purpose. Lastly, a few drawers should be provided in the table or elsewhere for table cloths and dusters, and possibly one or two deep ones to take the silver basket.

The larder should, of course, face north if possible, and even then have some means of excluding the early morning and evening sun in the long days of June and July. The window may be arranged with double casements, the outer one being filled with copper gauze through which air is admitted by day and night, and the inner one being glazed in the ordinary way, but allowed to stand open except on very frosty nights. Wood shelves do almost as well as slate or marble, and are much less costly if economy has to be studied. The floor may be of cement as

being clean and inexpensive, and one corner should be drained, with a small lead pipe to drip outside, both for washing purposes and in case ice is kept there during summer.

The store-room should be dry and well ventilated, but it should not be warmed either by hot pipes passing through nor by backing against a fireplace. And remember that it is the lady of the house who wants access to it, and will keep the key ; and she will very much appreciate a good light when she goes to give out stores.

Let the kitchen quarters be as carefully planned as our own, and in their way as nicely furnished. Give the cook a well appointed kitchen and the parlourmaid proper cupboards and dusters, so that their life is made comfortable, and "service" becomes something more than a wage-earning drudgery.



A NEW HOUSE AT CROWTHORNE, PHOTOGRAPHED WHEN ONLY JUST OUT OF THE BUILDER'S HANDS.

The walls are of brick whitened, only the chimney stacks, which are built with thin bricks, being left uncoloured. The windows have wooden casements filled with leaded panes. The roof is covered with local red tiles. See plan, p. 24.
[Plate V'III. to face p. 88.]

CHAPTER VIII.

PIPES AND WIRES.

SANITARY MATTERS.—Generally speaking there is only one satisfactory way of selecting sanitary fittings, and that is to visit the manufacturer's show rooms and see them in working order. It is worth while to ascertain that in doing so we are really dealing with the *makers*, not merely with tradesmen, whose knowledge is sometimes superficial, and whose judgment is occasionally affected by the trade discounts obtainable.

The next point essential to health and comfort is that these goods should be fixed by a capable plumber. Every precaution must be taken, for we occasionally find men who do poor work, although in no branch of the building trade do we find a higher average of work.

The simplest scheme of drainage, however, requires so much technical knowledge of sanitary engineering, that both the design and construction must be left to the architect or sanitary engineer. But the householder will find his greatest safeguard against all evils usually connected with the sanitation of a house in the proper ventilation of the drainage system. Fresh air, admitted by a pipe or grating to the last inspection chamber out in the garden, must be drawn into

the drains under the ground, and continually circulate through all pipes till it reaches, and is discharged at, the highest point of the system, where the ventilating shaft stands up above the roof. This circulation is automatic in its action if the drainage is well arranged, and care should be taken that the outlet is nowhere near any attic window, unless carried up well above it.

The disfiguring of the house by these pipes may be minimised by careful planning of the building, but there must always be at least one $3\frac{1}{2}$ or 4-inch pipe rising up clear above all windows. But, should some long branch drain seem to require a second ventilation pipe to itself, perhaps on an important elevation, it is sometimes possible to put a second fresh air *inlet* low down instead, and so get adequate ventilation without disfiguring the front of the house.

Another important precaution is to ascertain that the pipes are all airtight. Those underground may be tested most simply by standing water in them for half an hour or more, when a leak will be detected by marking the level of the water at the top. Great care must be taken in this case not to imprison air at a gulley trap, for unless it is allowed to escape by inserting a piece of indiarubber tube past the trap, the drain will appear full when it is not.

But a more satisfactory method of testing, and one by which all pipes above and below ground can be tested simultaneously, is by pumping in smoke at the lowest point. The outlet ventilation pipe above the roof should be stopped up as soon as the smoke begins to escape from it; and, when this is closed,

a certain amount of pressure may be applied by continuing to pump in more smoke. On a fairly still day, if all windows are kept carefully closed, defects will be easily detected both outside and indoors. A certain amount of pressure is essential, and so is a proper smoke testing machine.

In selecting the bath, care should be taken to get a good quality metallic enamel, or it will soon wear and become untidy; but the bath may with advantage be a small one, as it will strain the hot water supply of a small house much less, especially where there are children, and many baths to provide. It is a great comfort to have a bath that fills and empties itself quickly, and it is one that costs practically nothing extra if mentioned in time. Lead trays under the bath are not recommended, for they only become traps for soapy water, and disguise a leak if it occurs. Unless there is an important room underneath, which would mean bad planning, a carefully fitted cork carpet will, in case of a leak, give the ceiling below temporary protection, and will be naturally washed down from time to time with the rest of the floor.

Means should be provided for drawing hot and cold water upstairs without recourse to the bath taps, and as the housemaid's cupboard will probably be quite small, the taps may be placed under some passage window, where they are easily accessible, with just a drip sink below to protect the floor. Again, it is a great boon to have the taps of a good size, especially if the can has to be held while it is being filled.

WATER SUPPLY—HOT AND COLD.—When selecting

the site we ought to have ascertained that the water was wholesome for drinking purposes, yet it may in spite of this be a hard water, or have iron in it, and the material of the pipes must be chosen accordingly.

The quality of the water, and its action when heated on the boiler and pipes, can only be learnt from a plumber of local experience, and this should be done before any pipes are put in.

When the water is hard, and inclined to deposit lime in the boiler and pipes, the first precaution should be the use of large pipes next to the boiler, never less than $1\frac{1}{2}$ inches bore; and the circulating cylinder must be as near the boiler as possible to shorten the pipes between them. Most of the lime will be deposited in the boiler, but, when cleaning this, it is advisable to examine the flow and return pipes to the cylinder, and clean them too when necessary, for the greatest danger lies in their becoming choked.

Galvanized iron will be found satisfactory for the pipes and cisterns generally, although the whole hot water system will probably receive an internal coating of lime in the course of some years.

If soft water or rain water is used, the use of lead pipes should be avoided in the hot water supply, for owing to chemical action the soft water, especially if it contain any saline ingredient, may become contaminated by the lead. Galvanized iron piping should be used, preferably also for the cold water, except where there is iron in it.

Water that carries iron is generally of a soft nature, but it requires special precautions. The primary

difficulty is that the iron in the water seems to have a great affinity for all forms of galvanization, so that cisterns become rotten in a year or two, and the pipes get choked with a thick rust. The boiler being of cast-iron, and not galvanized, stands better than the wrought-iron pipes, and only requires to be cleaned regularly. But the pipes leading from it, and the circulating cylinder, are bound to be of copper and tinned inside, and the more of the system we can lay in copper the longer it will last.

Even the cold water must be kept clear of all galvanized iron, the pipes being of lead and the cistern in the roof of slab slate. The best preservative for iron, if it has to be used, is three coats of liquid cement put on with a brush; and this has proved more effectual than any ordinary paint, and more lasting.

Whether we have a continuous supply, or have to pump it every morning, a good-sized cistern at the top of the house is a precaution against accidents, and very much facilitates the distribution of the supply. When every drop has to be pumped, the storage should be sufficient for about two or three days, reckoning twenty gallons each day for each person. But where the supply is continuous, the storage need not be so large, for certain taps, especially those at which drinking water will be drawn, as for instance those in the pantry and scullery, should be taken straight off the rising main.

The pipes supplying the house from the tank in the roof must be connected to it at different levels, according to the importance of the taps they supply.

That supplying the bath should be connected above all others, so that in the case of any shortage of water, it is the first to fail and give warning. And in like manner the hot water system must be last to run dry, for, if the boiler is at the back of the range, the kitchen fire ought not to be used unless both the boiler and cylinder are full.

ELECTRIC LIGHT.—It is hardly within the scope of this book to discuss self-contained installations, for unless we can pick up current from a public supply, electric light would probably be beyond our means.

But a few hints as to workmanship and arrangement of lights may prove useful, when we find ourselves face to face with a firm, or the foreman in charge of the work. Also it is well to know, in case of accident, at what point the services of an electrician are necessary.

Amateurs are recommended not to dabble, for, when dealing with electric light current, a little knowledge is a particularly dangerous thing. But if anything goes wrong, and inspection is necessary, never omit the simple precaution of first turning off either the main switch or the controlling circuit switch. A careful perusal of the standard fire rules will go a long way to prevent serious mistakes.

The one thing an amateur can sometimes do is to replace fuse wires that have burnt out, but the proper sized wire must be kept handy for the purpose. If the new piece of wire will not stand, never put in a large one, for something is wrong, and more current will only make matters worse. Possibly too many lamps have been put on the circuit, or some wire or

fitting has developed a short circuit. In such cases, unless quite sure of their own powers to put matters right, those of slight experience should send for assistance.

The main fuses and switchboard must be not only in a good light, but on a dry wall and within easy reach. The wiring is run most simply and economically in the floors, protected by the ordinary wood casing; but where they have to be bedded in plaster they should be threaded through iron tubing fixed to the brickwork before the walls are plastered. This tubing should have good screwed joints, and be strong enough to resist the driving of picture nails.

It is true economy to have all switches, fuse boards, and fittings, of the best make and simple in construction. This applies also to incandescent lamps, which have an unfortunate knack of wearing out; and to get the full value of the current, lamps should be renewed as soon as their brightness is seriously diminished. When by daylight the inside of the bulb has a dirty look about it, it is quite time for that lamp to be replaced by a new one.

FITTINGS.—There are few houses electrically lighted in which the fittings give complete satisfaction; and on the other hand there are thousands in which the lighting is ugly and ill-considered. Where expenses have to be kept down, ornamental brass and copper are expensive and unnecessary items; and, while the foreman may regard them as essential to a good job, his taste may be influenced by the knowledge that “fittings” bring his firm the quickest return.

No light lends itself to delicate and fairy-like

treatment like that of the ordinary incandescent lamp. The lamp, holder and silk shade together weigh hardly anything, so it is wholly unsuitable to fix them by means of stiff brass pipes or elaborate scrolls of ironwork. A standard lamp must, of course, have weight in the base to make it steady, but even here simplicity of form is both more suitable and more economical than anything ornate.

The only extravagance, if indeed it is one, to be recommended on artistic grounds is that of increasing the number of lamps, in order to use those of low candle-power. High power lamps give most light for the money, but in the passages, hall, and wherever the light will be in continual use, it is both economical and pleasing to have lamps of four candle-power only, with extra points for use on special occasions. To arrive after dark in a hall lighted by a single thirty-two candle-power lamp is very unpleasant; and such a light is most unbecoming for a pretty house.

In the sitting rooms we may rely entirely on wall plugs, one of which can easily be placed under the control of a switch near the door. Wall brackets and pendants can hardly ever be placed conveniently for reading, for since the light on an object varies "inversely as the square of the distance" from the source, we get just one *quarter* of the light, at a distance of six feet, that we should were we only three feet away from the lamp. So table lamps, and standards which we can move about, are the most economical form of lighting; and, generally speaking, a small room is sufficiently lighted when each important table

and perhaps the piano has its own lamp. Several small lamps at points where they are actually required produce a soft effect, and sufficient general light, without recourse to wall brackets or pendants solely for ornamental purposes.

A single badly-placed light, which shines in our eyes, is quite sufficient to make the rest of the room appear murky and ill-lighted. It is best, therefore—in a small room at any rate—to shade every lamp, especial care being taken with pendants and wall brackets, if there are any. A blaze of light may be effective on occasions, but it is rather vulgar in the ordinary way, and often spoils the room.

The dining-room offers the same problem; but, in so far as the table is probably always in the same position, an adjustable pendant well shaded is a convenient method of illumination. Whether we use candles or central pendant, the dining-table should be the principal feature of the scheme of lighting; and this can be done without excessive brilliancy if all lamps round the walls are of a low power. Nothing is more cheerful than a bright table; the glasses sparkle, the silver glitters, and a good tablecloth looks its best, while flowers and fruit give a beautiful touch of colour.

ELECTRIC BELLS. — Convenience, simplicity, and economy in construction all point to the use of electricity in place of the old-fashioned lever bell. Yet how often we hear complaints that electric bells get out of order. First it is that they refuse to ring at all, and then that they continue to ring for upwards of an hour without ceasing, baffling all attempts to stop them.

Of course the local builder may make the not uncommon mistake of thinking he knows all about electric bells when he does not; but they are so simple in construction that the fault more often lies with cheap fittings or culpable carelessness in their erection.

To be equally reliable and more economical than the old lever bell, the electric installation must have good wires and well-made fittings properly protected from the atmosphere. If we see to this, there only remains the quality of the workmanship.

A bad workman will invent a new blunder on each job, but one of the commonest is that of putting the wires of both poles under one staple. This is a frequent cause of short circuit, which so often results in continuous ringing. Badly-made joints, loose screws, and exhausted batteries are, on the other hand, the commonest causes of their refusal to ring when required.

The only attention electric bells require on the part of the householder is the occasional replenishing of the battery. No battery is more common, or works better, than the ordinary "Leclanché"; and all that it requires to keep it in working order is sufficient water added from time to time to keep the jars about three-quarters full. Then once a year the jars should be emptied and re-filled with a fresh solution of sal ammoniac. This should be made by dissolving in a jug as much sal ammoniac as the water will take up; and in pouring it out, care should be taken to allow no undissolved particles to pass into the jar—a not infrequent cause of "creeping" or "boiling over."

In re-charging there lies a source of much future difficulty if the operator is careless or inexperienced. Sal ammoniac is like an infectious disease, and the fingers after handling it should be allowed to touch no part of the metal work, nor even the covered wires, until all trace of the mixture has been removed from them by soap and water.

As regards the arrangement of bells and pushes very little need be said. It saves a good deal of time and trouble on the servant's part if the bells most used are kept separate with a distinctive-toned gong. For instance, the front-door should be easily distinguished, and the drawing-room might also have a separate bell. But this will not excuse a badly-placed indicator, which should be in some light passage which the servant will naturally pass, whether coming from the pantry or kitchen.

CHAPTER IX.

THE ALTERATION OF OLD HOUSES.

THE adaptation of existing houses to our particular requirements is always a difficult subject, but more especially so when the old place has some historical interest of its own.

There are, architecturally speaking, two ways of approaching the problem, which we ought to realise from the commencement, or we shall fail by trying to follow both. We must either retain the proportions, the feeling, and the sentiment of the old building, or else boldly ignore these and give the modified building our own expression and our own proportions.

No attempt at combining the two is ever likely to succeed, especially in cases where the existing building has artistic merit or historical association; and we may take it for granted that in the majority of alterations the existing building has some kind of architectural attraction.

Take, for instance, a small farmhouse with mulioned windows and a stone-tiled roof. It is not enough that additions to such a building should be "in the same style." Herein lies the origin of all sorts of vandalism up and down the country. The "style" is quite unimportant in comparison to the

effect of the additions on the original architectural conception.

The old house represents the former generation's ideal of what that particular English farmstead should be ; and unless we can preserve it, and by our addition admit our admiration for it, we shall do much better to leave it alone and build a new house elsewhere. It is the fashion, we all know, to live in a "charming old place," but that does not justify the inflating process applied to old cottages to make comfortable homes for the fashionable.

Surely a cottage parlour as generally converted into a modern drawing-room is rather ridiculous, being neither one nor the other, and yet considered safe from criticism because it is an "alteration." Every limitation that attaches to the parlour is overruled. The mullioned windows are lengthened downwards, bays are thrown out, or French windows inserted, regardless of all sentiment ; and, while we suspect that a brick floor has been removed to make way for deal boards, it is quite obvious that the rough plaster walls were never intended for the modern paper we find on them.

Beautiful examples of old work in the country have in these ways suffered severely under the recent craze for the "antique" ; for, while their transformation robs them of practically all their architectural completeness, the ruins still appeal strongly to the amateur antiquarian, who has found an easy means of obtaining a home full of interest, and one of which to boast to his friends. In how many cases has the artistic capital of the country been squandered in some

such way owing to complete ignorance of what "architecture" means, coupled with a very little knowledge of archæology.

Impatience, again, may be another cause, for people seem unable to wait for a new garden to grow, or a new house to tone and clothe itself with creepers; they must find an old house with a ready-made garden. Still more often the desire to possess an old house can be traced to a distrust in one's own powers of discrimination in artistic matters and inability to conceive a modern home that is beautiful. What is more natural under such circumstances than recourse to the fashionable "old house"? But although such a possession is generally supposed to be the proof of an artistic temperament, nothing, in reality, requires so much care in furnishing, and nothing exposes so readily any lack of good taste in the possessor.

Yet it is not enough that beautiful houses should be merely kept in repair as show-places, for, if they are to be fully appreciated or exercise any influence on the present generation, they must be lived in. And this implies that they must be brought up to date in various ways, and possibly even enlarged. But it is always worth consideration whether we cannot, with a little ingenuity and great discrimination in making these additions and alterations, preserve the spirit as well as the carcase of the building, and so carry on the traditions of former centuries in those of a present-day home. Merely to incorporate old walls and windows, without regard to their original significance, as members of another design is to deliberately disregard the expression of the old building. The *tout*

ensemble of these old houses is of much greater value than all the individual features they contain, and this is what we have to retain if by any means it is possible to do so.

By all means let us live in these beautiful houses, and make what alterations are necessary to adapt them to modern habitation, but let us remember that they have already seen and recorded many generations, and that it remains with us, when making alterations, either to add to these traditions or to obliterate the whole history of their erection and existence.

It is impossible to indicate any except the broadest general principles, for every case must be dealt with on its own merits, but one or two examples may be given of the sort of way to go to work when dealing with features of some architectural value.

For instance, when it becomes necessary to close an old doorway, the wall need not be necessarily built up to present a flat surface on both sides, but the door frame might be allowed to remain, particularly when surrounded with moulded stone. Sometimes the door itself can be left with a shallow cupboard behind, for we thereby admit that we are only adapting the old place to our immediate requirements.

An outside doorway, again, may be in a position where a window would be more suitable, or even necessary, under the new arrangement. We must consider, supposing no modification in the plan will avoid this, whether it would not meet the case to fill the upper part of the doorway with a single large sheet of square leaded panes, and so obtain the

required light without serious structural alteration and loss of continuity in tradition.

In the interior decorations such features will become far more charming with the exercise of a little imagination in the furnishing than any artificial quaintness, such as we find crowded into many would-be artistic homes.

Internally, again, it may be the case that no architectural scheme exists, nor any proportion to guide us. Still, the personality of former generations, as recorded in the features of the old building, remains a more valuable architectural factor than any we can apply to an old fabric.

Our appreciation of a fine building is increased four-fold by entering into the difficulties that beset the builders and by realising the enormous amount of skill and labour required before each stone had been cut or carved and laid, each in its right place, to produce the final result. So with individual features, true appreciation of their shape cannot possibly exist without some knowledge of how they are built or constructed, and also some insight into the designer's mind to realise the fitness of the detail in relation to the rest of the design. This human and personal quality of the work is the secret of the life which the old builders always imparted to their productions, and which we must keep at all hazards.

In painting it is generally understood that a fine landscape is much more valuable than a perfectly-coloured photograph, because in the painting we have the artist's mind before us. He has extracted a most beautiful aspect of all he saw before him and recorded

it for us on his canvas. The mass of detail seen in the photograph may be a perfect record of fact, but his is an idealised record of fact, and we call it a picture, for we are in touch with the painter's mind.

So it is with an old manor house. We find not only good construction, but evidence of thought and care in the proportioning of various parts. We see, in fact, some of the aims and aspirations in the mind of the master builder. We are in touch with the humanness of the work.

Does not all this explain to some extent the fascination of a ruin? As we look around us at broken arches and fragments of carving we are able to picture, more easily than in a complete building, the enormous labour and skill that was expended, and to realise what the faith and enthusiasm of the old builders must have been to produce the effect before us.

This is the spirit in which to approach the problem of altering an old house. Let us clearly understand the reasonableness of the design in whole and in detail; next let us see how the master builder surmounted the difficulties of construction; and finally let us appreciate the thought and labour bestowed by the individual carpenter and mason on every timber and every stone in the building. These are the thoughts to guide us in the design of modern additions, and they will do so the more easily if we also realise something of the building's history, something of the lives and characters that have been staged there, each in their short turn over the ages since the foundations were laid.

But while many houses have fallen on bad times and have lost all interest and character at the hands of self-satisfied restorers, there is another extreme which is ridiculous although it is not so harmful.

There are some who so venerate the antique that they would have no broken arch rebuilt and no missing stones replaced, or if replaced, require them to be of some distinctive moulding or shape that they may never be thought to be original. But our descendants are not going to be fools not to know old and new work apart. Why should not these missing stones be replaced and the broken arch rebuilt as nearly as possible in their original form? for the quality of the stone and the nature of the joint will still be quite sufficient to stamp it as a repair to anyone with knowledge. What, on the other hand, does require great care and judgment is to know when and what repairs are essential. No single stone must be removed that is by any ordinary means reparable, nor should any carving or ornament be renewed unless the stone itself is so worn as to be no longer safe itself or a proper support to the structure. Carved ornament is not often essential to these old designs, so, however defaced it may be, we had best leave it, for no modern carving can possibly enhance the value of a weather-worn building, conceived in another age and under conditions so different from the present.

But this has one exception, which, perhaps, proves the rule. The filling of an empty niche with a good bit of modern sculpture is entirely justifiable. No part of the old work suffers by comparison with an independent figure; on the contrary, if it is good

enough, it forms a focus and completes the old design, without for a moment pretending to be part of the original.

Apart from the building itself, there are many accessories which it is equally essential to retain, and, should they require it, to restore, if we are to keep the spirit of the old place.

The principal one is, perhaps, the general laying out of the ground immediately near the house, the fore-court and terraces, with their gateways and flights of steps. None of the old men plumped a house down in the middle of the site without some distinct scheme for the approaches and gardens, and, as far as is possible, we must retain the old idea.

Then the origin and purpose of all the outbuildings should be considered, even if we have to adapt them to other uses. Old stables, farm buildings, and linneys, all have a distinct historical bearing in relation to the house, and must be treated according to their æsthetic value, not merely as encumbrances because we happen to have no use for them.

In taking possession of and altering a beautiful house, whether it is a family heirloom or a recent acquisition, one thought to guide the owner is that, in the eyes of the future generations, no aggrandisement and no adaptation of the house to his personal requirements will atone the loss of the historical and architectural qualities of the original building.

APPENDIX.

MEMORANDA AND DIMENSIONS IN LAYING OUT A SITE.

DRIVES should be 8 ft. wide for a single vehicle. Two carriages can just pass in a drive 11 ft. wide.

A two-horse carriage turns in 21 ft., but 30 ft. should be allowed if possible.

PATHS.—To allow two to walk comfortably side by side a path should be 5 ft. wide. Near the house paths look best if made wide and perfectly straight.

TERRACES.—A terrace in front of a house should not be so wide as to make the house appear to settle down behind it. The greater the fall of the ground, therefore, the narrower should the terrace be, in order that it may add, not detract from, the height of the building. Steps should be in flights of not less than three nor more than nine. Terraces, wherever they are, generally look best absolutely level from end to end.

LAWNS.—For sowing a lawn, from two and a half to three bushels of grass-seed are required per acre (4,840 sq. yds.).

A tennis-lawn measures 78 ft. long by 36 ft. wide for a double court, or 27 ft. for a single. Twenty feet should be allowed for running back at either end, and 10 ft. at the sides. The service lines are 21 ft. from

the net. Badminton courts are 44 ft. long and 20 ft. wide ; 10 ft. should be allowed all round.

PERGOLAS.—Generally speaking, pergolas should be wide and rather low in appearance. Eight feet may be taken as a minimum width, and 7 ft. to the underside of the cross-bars is sufficient height. They should generally be straight, and they look very well on a stepped or sloping path.

ROUGH GROUND.—Expert advice should be taken early in the proceedings as to the best treatment for the ground, especially if weedy or neglected. "Paring and burning," although rather a lost art, cleans the ground better than anything else. While a new house is building a crop of potatoes all over the garden will be found to break up the soil and prepare it for other vegetables and flowers.

Good permanent pasture makes the best lawn, but must never be allowed to grow rank even during building operations, or it will take two or three years to recover.

COMPASS POINTS. — Nothing but a good compass should be trusted in setting out a house, for magnetic north must be clearly distinguished from true north. It should also be remembered that the sun is not *exactly* due south at midday except on four occasions during the year.

MEMORANDA AND DIMENSIONS IN THE HOUSE.

INSURANCE.—Never omit, when making alterations to a house, to give the insurance company notice. The presence of workmen for building operations

without notice being given justifies the company in *refusing compensation* in case of a fire. Sometimes a small extra fee is demanded during the alteration.

WATER COMPANY.—Most water companies require two days' notice of any addition or alteration to the water service in a house.

RAIN-WATER.—With a rainfall of 30 in. in the year every 100 sq. ft. of roof (measured horizontally) gives about 400 gallons of rain-water. Where there is no other adequate supply, four or five months' supply should be stored, reckoned at the rate of twenty gallons per head per day.

GUTTERS.—All gutters should be attended to regularly when the leaves are falling in the autumn. A ceiling once stained by a leak will never regain its original whiteness.

Creepers should also be cut each autumn to prevent their climbing over the gutters or roofs.

DRAINS.—All grease-traps should be cleaned thoroughly at least once a week. About once a quarter the whole drainage system should be examined and flushed.

COAL CELLAR.—For a ton of coal allow 45 cubic feet storage. It should not be stacked more than 4 or 5 ft. high unless special provision is made. A 2-in. step down into the cellar will be found effective in keeping back coal-dust. The door should generally open outwards.

DECORATION.—When possible, decoration should be postponed till the house has stood a year or more. If, however, it is desired to paper or distemper the walls at once, it will be found that, while reds and yellows

stand, all greens and blues will turn brown or patchy. These latter colours should, therefore, be avoided if possible in a new house.

BILLIARD ROOM.—A billiard-table measures 6 ft. wide by 12 ft. long between the cushions. An ordinary cue is about 5 ft. long. The room should not be much less, therefore, than 24 ft. long by 18 ft. wide to enable every stroke to be played without hindrance.

PIANOS.—All pianos are about 4 ft. 6 in. wide. An upright piano is generally 4 ft. high. Grands are from 6 ft. to 8 ft. 6 in. long. A space of 2 ft. is required in addition for the seat. The piano must have a good light, but on no account should it stand in a draught from either an open door or window.

BOOKSHELVES.—When the shelves have to be fixed, the most useful heights are as follows, starting from the top:—7 in., 8½ in., 8½ in., 8½ in., 10 in., 12 in., 18 in.

Those 8½ in. high take the ordinary-sized novel (crown 8vo) comfortably.

POLISH FOR FURNITURE.—The following makes an inexpensive polish for either furniture or stained floors, and one which will not feel sticky or show finger-marks like that formed only of turpentine and beeswax.

1 oz. of white wax, 1 oz. of Castile soap, ½ pint of soft water, 2 oz. of beeswax, ½ pint of turpentine. Dissolve the beeswax in the turpentine; dissolve the white wax and Castile soap in the soft water; then mix the solutions thoroughly.

ARCHITECTS' CHARGES.—The following scale of charges is issued by the Royal Institute of British

Architects, and is inserted here with their permission :—

Schedule sanctioned by the Royal Institute of British Architects, confirmed at a General Conference of Architects of the United Kingdom 1872, and revised by the Royal Institute 1898.

1. The usual remuneration for an architect's services, except as hereinafter mentioned, is a commission of 5 per cent. on the total cost of works executed under his directions. Such total cost is to be valued as though executed by a builder with new materials. This commission is for the necessary preliminary conferences and sketches, approximate estimate when required (such, for instance, as may be obtained by cubing out the contents), the necessary general and detailed drawings and specifications, one set of tracings, duplicate specification, general superintendence of works, and examining and passing the accounts, exclusive of measuring and making out extras and omissions.

2. This commission does not include the payment for services rendered in connection with negotiations relating to the site or premises, or in supplying drawings to ground or other landlords, or in surveying the site or premises and taking levels, making surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings for and correspondence with local and other authorities, or for services consequent on the failure of builders to carry out the works, or for services in connection with litigation or arbitration,

or in the measurement and valuation of extras and omissions. For such services additional charges proportionate to the trouble involved and time spent are made. The clerk of the works should be appointed by the architect, his salary being paid by the client.

3. In all works of less cost than £1,000, and in works requiring designs for furniture and fittings of buildings, or for their decoration with painting, mosaics, sculpture, stained glass, or other like works, and in cases of alterations and additions to buildings, 5 per cent. is not remunerative, and the architect's charge is regulated by special circumstances and conditions.

5. If the architect should have drawn out the approved design, with plans, elevations, sections, and specification, the charge is $2\frac{1}{2}$ per cent. upon the estimated cost. If he should have procured tenders in accordance with the instruction of his employer, the charge is $\frac{1}{2}$ per cent. in addition. Two and a half per cent. is charged upon any works originally included in the contract or tender, but subsequently omitted in execution. These charges are exclusive of the charge for taking out quantities. Preliminary sketches and interviews, where the drawings are not further proceeded with, are charged for according to the trouble involved and time expended.

6. Should the client, having approved the design and after the contract drawings have been prepared, require material alterations to be made, whether before or after the contract has been entered into, an extra charge is made in proportion to the time occupied in such alterations.

7. The architect is entitled during the progress of the works to payment by instalments on account at the rate of 5 per cent. on the amount of the certificates when granted, or alternatively on the signing of the contract, to half the commission on the amount thereof, and the remainder by instalments during their progress.

8. The charge per day depends upon an architect's professional position, the minimum charge being three guineas.

16. For inspecting, reporting, and advising on the sanitary condition of premises, the charge must depend on the nature and extent of the services rendered.

17. In all cases travelling and other out-of-pocket expenses are paid by the client in addition to the fees. If the work is at such a distance as to lead to an exceptional expenditure of time in travelling, an additional charge may be made under Clause 8.

PAYMENTS TO BUILDERS.—Payments to builders should only be made on receipt of the architect's certificate that so much is due. The rate is generally 80 per cent. of the value of the work fixed, and the balance on completion.

ORDERS TO BUILDERS.—When an architect is in charge of the work all orders should pass through him. To order extra items of work without the knowledge of the architect will almost certainly result in difficulties, and, if the builder is not strictly honest, in waste of money. All orders should be in writing, and the work required very clearly stated.

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